

Wiley Finance Series

Merger Arbitrage

Second Edition

*How to Profit from Global
Event-Driven Arbitrage*

THOMAS KIRCHNER

WILEY

Merger Arbitrage

The Wiley Finance series contains books written specifically for finance and investment professionals as well as sophisticated individual investors and their financial advisers. Book topics range from portfolio management to e-commerce, risk management, financial engineering, valuation and financial instrument analysis, as well as much more. For a list of available titles, visit our website at www.WileyFinance.com.

Founded in 1807, John Wiley & Sons is the oldest independent publishing company in the United States. With offices in North America, Europe, Australia, and Asia, Wiley is globally committed to developing and marketing print and electronic products and services for our customers' professional and personal knowledge and understanding.

Merger Arbitrage

*How to Profit from Global
Event-Driven Arbitrage*

Second Edition

THOMAS KIRCHNER

WILEY

Copyright © 2016 by Thomas Kirchner. All rights reserved.

Published by John Wiley & Sons, Inc., Hoboken, New Jersey.

The First Edition of this book was published by John Wiley & Sons, Inc. in 2009.

Published simultaneously in Canada.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning, or otherwise, except as permitted under Section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600, or on the Web at www.copyright.com. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at <http://www.wiley.com/go/permissions>.

Limit of Liability/Disclaimer of Warranty: While the publisher and author have used their best efforts in preparing this book, they make no representations or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaim any implied warranties of merchantability or fitness for a particular purpose. No warranty may be created or extended by sales representatives or written sales materials. The advice and strategies contained herein may not be suitable for your situation. You should consult with a professional where appropriate. Neither the publisher nor author shall be liable for any loss of profit or any other commercial damages, including but not limited to special, incidental, consequential, or other damages.

For general information on our other products and services or for technical support, please contact our Customer Care Department within the United States at (800) 762-2974, outside the United States at (317) 572-3993 or fax (317) 572-4002.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at <http://booksupport.wiley.com>. For more information about Wiley products, visit www.wiley.com.

Library of Congress Cataloging-in-Publication Data:

Names: Kirchner, Thomas, 1968–author.

Title: Merger arbitrage : how to profit from event-driven arbitrage / Thomas Kirchner.

Description: Second edition. | Hoboken, New Jersey : John Wiley & Sons, Inc.,

[2016] | Series: Wiley finance | Includes index.

Identifiers: LCCN 2015046839 (print) | LCCN 2016002279 (ebook) |

ISBN 9781118736357 (hardback) | ISBN 9781118736807 (pdf) | ISBN 9781118736661 (epub)

Subjects: LCSH: Arbitrage. | Consolidation and merger of corporations. |

Stock exchanges and current events. | BISAC: BUSINESS & ECONOMICS / Finance.

Classification: LCC HG4521 .K48 2016 (print) | LCC HG4521 (ebook) | DDC

332.63/2—dc23

LC record available at <http://lcn.loc.gov/2015046839>

Cover Design: Wiley

Cover Image: ©VladKol / iStockphoto

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1

Contents

Preface	vii
Acknowledgments	xi
PART ONE	
The Arbitrage Process	1
CHAPTER 1	
Introduction to Merger Arbitrage	3
CHAPTER 2	
The Mechanics of Merger Arbitrage	18
CHAPTER 3	
The Role of Merger Arbitrage in a Diversified Portfolio	50
CHAPTER 4	
Incorporating Risk into the Arbitrage Decision	103
PART TWO	
Pitfalls of Merger Arbitrage	141
CHAPTER 5	
Sources of Risk and Return	143
CHAPTER 6	
Deal Structures: Mergers and Tender Offers	188
CHAPTER 7	
Financing	217

CHAPTER 8	
Legal Aspects	250
CHAPTER 9	
Management Incentives	293
CHAPTER 10	
Buyouts by Private Equity	328
CHAPTER 11	
Minority Squeeze-Outs	341
PART THREE	
Investing in Merger Arbitrage	361
CHAPTER 12	
Government Involvement	363
CHAPTER 13	
Four Ways to Fight Abuse of Shareholders in Mergers	409
CHAPTER 14	
Investing in Arbitrage	435
Notes	475
About the Author	483
Exercises	485
Index	497

Preface

Since the first edition of this book interest rates have fallen to near zero and have dragged returns on merger arbitrage with them. With the foreseeable end of the Federal Reserve's zero interest rate policy it is likely that investors will allocate to merger arbitrage again in the near future. This book is written as a guide to potential investors who seek to understand the strategy better prior to committing an investment, investors who may have an allocation to merger arbitrage through model portfolios or maybe even their pension plan, as well as aspiring arbitrageurs.

Merger arbitrage, also known as risk arbitrage, has grown exponentially since the 1980s from small operations within Wall Street firms to standalone arbitrage funds directly accessible to the public. Yet, surprisingly little has been written on the topic. A number of academics have written studies about various aspects of the strategy. For the general public, I can count only six books on the topic. This small number pales in comparison to the information overload that other areas of finance experience. Since Guy Wyser-Pratte's two monographs in the 1970s, only three other books about merger arbitrage have been published. One of them is Ivan Boesky's *Merger Mania*. Maybe potential writers fear that authoring a merger arbitrage book stands under a bad omen because Boesky was arrested a few weeks after the publication of his book. As the author of a merger arbitrage book, I certainly hope that writing a book and getting arrested are linked only by correlation and not causality.

In this book I try to go beyond a mere description of the arbitrage process to incorporate some thoughts on the benefits of adding merger arbitrage to an investment portfolio, and the vehicles that investors can utilize to access the strategy. The expansion of the book's horizon will make it more relevant to a broader investment audience. Nevertheless, the focus of the book remains on mergers and merger arbitrage and not asset allocation or portfolio management.

The book is organized into three parts: the first three chapters introduce the basics of the arbitrage process and explain the benefits of the investment strategy in the context of a portfolio allocation. Chapters 4 to 8 discuss more details about the analysis involved in an arbitrage decision. Chapters 9 to 11 discuss special transactions that warrant particular diligence by arbitrageurs. Chapters 12 to 14 address additional regulatory aspects as well as

practical considerations, including measures arbitrageurs can take to defend their interests, such as exercising appraisal rights.

The first two chapters explain the basic types of mergers and how to set up the arbitrage.

Chapter 3 is an interlude that explains the historical performance of merger arbitrage as an investment strategy, and how it can be added to a diversified portfolio. This chapter in particular will be relevant for investors who are looking to add merger arbitrage to their portfolio.

Chapter 4 expands the basic arbitrage by incorporating risk. Probabilities of failure and potential losses are incorporated into the return calculation to find an expected return of the arbitrage. Chapter 5 discusses different sources of risk and return in more detail, in particular the timing of mergers, leverage, and short sales.

The difference between mergers and tender offers is not well understood by many investment professionals. The terms are often used interchangeably. Chapter 6 goes into details and should be of interest to all investors, not just those seeking to read up on merger arbitrage.

Financing is often one of the most critical parts of an acquisition, and so Chapter 7 will look at different financing options.

Mergers are subject to a plethora of legal requirements, and I discuss them under different angles. Readers should keep in mind that this is a financial book and not a legal textbook, so that many aspects are touched on only in a cursory manner. Boards of directors have to follow a number of procedures to ensure that a merger is fair to shareholders. This will be discussed in Chapter 8.

Unfortunately, the law that is supposed to protect shareholders is often disregarded when managers buy the companies that they are managing as agents of their shareholders. Chapter 9 looks at management incentives for getting mergers done and how the interest of managers are often diametrically opposed to those of shareholders.

Similar conflicts of interest between managers, acquirers, and shareholders can be found in buyouts by private equity funds, discussed in Chapter 10.

Minority squeeze-outs present risks of their own to merger arbitrageurs, and therefore are discussed in a chapter of their own, Chapter 11.

The government gets involved in the merger process on several levels, federal and state. Despite the obvious importance of government regulations, I have decided to relegate its discussion further to the back of the book because I believe that the motivations of the market participants—management, financiers, board members—are more relevant by far to the success of a merger than government regulations, discussed in Chapter 12. As they say: where there is a will, there is a way.

Next, I step into a minefield by encouraging investors to seek to exercise their rights and get full value for their shares when a company is taken over.

Chapter 13 describes methods that shareholders can use to that end. Too often have I seen investors resign when their company gets taken over for a lowball price. Most investors view themselves as stock pickers and will throw in the towel too early. I hope that this chapter will convince investors, maybe even some institutional investors, to fight for full value. Chapter 14 gives some practical tips on investing in merger arbitrage. In particular, readers should retain that cash holdings of event-driven investment strategies are dependent on events and not a deliberate asset allocation decision. As a result, merger arbitrageurs can have highly variable cash positions that are not an indication of the arbitrageur's view of the market.

The last chapter contains some mathematical material. Stephen Hawking remarked in the introduction to his well-known *A Brief History of Time* that his publisher advised him that each formula would reduce the potential readership by half. I trust that readers of financial books can handle a few formulae.

Acknowledgments

I thank the editorial team at John Wiley & Sons for their support throughout the development of the book, in particular Laura Walsh, who first contacted me with the idea for this book, Emilie Herman, Meg Freeborn, and Bill Falloon as well as the reviewers who made valuable comments.

Ron Charnock has been very supportive and encouraged me with many helpful tips. Others who have given me ideas, sometimes unwittingly, that are incorporated in the text are Geoffrey Foisie, Randy Baron, Juan Monteverde, Randall Steinmeyer, Eric Andersen, and Marc Weinberg.

Adam Mersereau recognized the potential behind applying the newsvendor formula to the cash management problem and referred me to Warren Powell, who developed the algorithm in Chapter 14 with Juliana Nascimento.

Ashish Tripathy worked with me on analyzing probabilities for the closing or failure of mergers.

Finally, I thank all authors who have given me permission to reprint tables or figures from other studies.

Merger Arbitrage

PART

One

The Arbitrage Process

Introduction to Merger Arbitrage

Arbitrage is one of the oldest forms of commercial activity. One of the earliest published definitions of the term *arbitrage* can be found in Wyndham Beaves's seminal *Lex Mercatoria*,¹ first published in 1685, which trained several generations of European merchants until its last edition of 1803. One will be hard pressed to find a finance book today that has been in print for over a century. In the 1734 edition, Beaves writes about arbitrage:

ARBITRATION (a Construction of the French Word Arbitrage) in Exchanges has been variously defined by the several Authors who have treated of it.

One says it is a Combination or Conjunction made of many Exchanges, to find Out what Place is the most advantageous to remit or draw on.

Another describes it, by saying it is only the Foresight of a considerable Advantage which a Merchant shall receive from a Remis or Draught, made on one Place preferably to another.

A third construes it to be a Truck which two Bankers mutually make of their Bills upon different Parts, at a conditional Price and Course of Exchange.

According to a fourth, it is the Negociation of a Sum in Exchange, once or oftener repeated, on which a Person does not determine till after having examined by several Rules which Method will turn best to Account.

Lex Mercatoria, 1734, p. 387

Around that time also appeared in Basel the first book dedicated to arbitrage, J. Wiertz's 1725 oeuvre *Traite des Arbitrages de Change*,² which discusses various calculation methods to convert one currency into another. All of these early forms of arbitrage involved currency arbitrage. Patrick Kelly describes a typical nineteenth-century arbitrage in his 1811 book *The Universal Cambist, and Commercial Instructor: Being a General Treatise on Exchange, Including the Monies, Coins, Weights and Measures of All*

Trading Nations and Their Colonies: with an Account of Their Banks and Paper Currencies,³ which took over from Beaves's *Lex Mercatoria* as the obligatory text book for merchants in the nineteenth century:

Arbitration of Exchange

Arbitration of Exchange is a comparison between the course of exchange of several places, in order to ascertain the most advantageous method of drawing or remitting Bills. It is distinguished into simple and compound arbitration: the former comprehends the exchanges of three places only, and the latter of more than three places.

Simple Arbitration

Is a comparison between the exchanges of two places with respect to a third—that is to say, it is a method of finding such a rate of exchange between two places as shall be in proportion with the rates quoted between each of them and a third place. The exchange thus determined is called the Arbitrated Price, and also Proportional Exchange.

If, for example, the course between London and Paris be 24 Francs for £1 sterling, and between Paris and Amsterdam 54d. Flemish for 3 Francs, (that is, 36s. Flemish for 24 Francs,) the arbitrated price between London and Amsterdam through Paris, is evidently 36s. Flemish for £1 sterling: for as 3 Fr. : 54d. Flem. :: 24 Fr. : 36s. Flem.

Now, when the actual or direct price (as seen by a quotation of otherwise advised) is found to differ from the arbitrated price, advantage may be made by drawing or remitting indirectly; that is, by drawing on one place through another, as on Amsterdam through Paris; [...]

To exemplify this by familiar illustrations, suppose the arbitrated price between London and Amsterdam to be, as before stated, 36s. Flemish for £1 sterling; and suppose the direct course, as given in Lloyd's list, to be 37s. Flemish, then London, by drawing directly on Amsterdam, must give 37s. Flemish for £1 sterling; whereas, by drawing through Paris he will give only 36s. Flemish for £1 sterling; it is, therefore, the interest of London to draw indirectly on Amsterdam through Paris.

As securities markets began to develop and expand globally during the nineteenth century, arbitrage began to expand beyond simple currency exchanges. This is reflected in how Otto Swoboda expands the definition

of arbitrage in his book *Börse und Actien*, first published in Cologne in the year 1869:⁴

Under arbitrage, that is decision, we understand the comparison of notations of any one place with those of another in order to use any arising difference, relative to exchange rates as well as security quotes, and thereby those who enter into such arbitrages (bring together) differences in prices between to places in their favor. [...] Early arbitrages occurred only in exchange rates, and only when a merchant owed another in a different location a certain amount or had a claim. He would then compare quotations in different places to see in which it would be most favorable to cover the debt or cover the claim. Only later a trade of its own developed from this, so that even without preceeding commerce a speculation in currencies or funds was effected.

The analysis of *n*-grams of books digitized by Google in Figure 1.1 shows the occurrence of the term *arbitrage* in printed books over time. In the early days of book printing, *arbitrage* appears to have been used frequently. However, it is the comparatively small number of books in print then that inflates the relative use of this term.

It is not until another century later, the 1960s, that *merger arbitrage* first appears in print, followed by *risk arbitrage* a few years later. The analysis of *n*-grams in Figure 1.2 shows the explosive growth of the usage of these terms since then. It is no surprise that the late 1960s gave rise to growing interest in arbitraging mergers, as this coincided with a wave of aggressive merger activity in England and the United States, which led to the adoption of many laws still in place today, such as the City Code. This will be discussed in more detail later. While *risk arbitrage* dominated as a description of the strategy discussed in this book for many years, *merger arbitrage* became more popular as a term in the late 1990s, and has surpassed *risk arbitrage* as the dominant term since the year 2005.

Unfortunately, the early descriptions of arbitrage are echoed in many modern-day definitions. Merriam-Webster's 11th Collegiate Dictionary defines it as:

1. *The nearly simultaneous purchase and sale of securities or foreign exchange in different markets in order to profit from price discrepancies*
2. *The purchase of the stock of a takeover target especially with a view to selling it profitably to the raider*

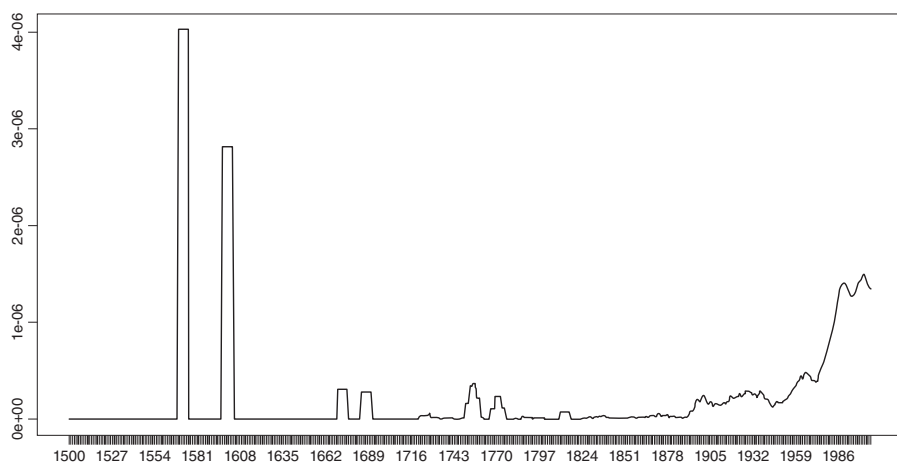


FIGURE 1.1 Frequency of the Occurrence of the Term *Arbitrage* in Printed Books

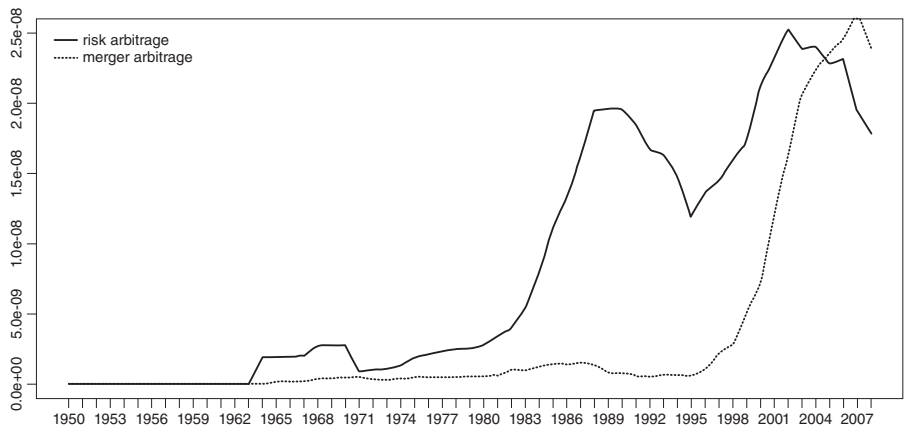


FIGURE 1.2 Frequency of the Occurrence of the Terms *Merger Arbitrage* and *Risk Arbitrage* in Books

While the second definition in Merriam-Webster relates to the subject matter at hand in this book, both definitions fail to capture all the different facets and breadth of arbitrage properly. In a world of instant global communications, the first type of arbitrage is rarely viable. A much better definition of arbitrage is that used by economists, who define arbitrage as a “free lunch”: an investment strategy that generates a risk-free profit. Academic finance theory formalizes this definition as a self-financing trading strategy that generates a positive return without risk. Three different degrees of arbitrage can be distinguished, as shown in Table 1.1.

A simple location arbitrage in commodities would be the purchase of crude oil in Rotterdam, the rental of a tanker, and the simultaneous resale of the oil in New York. Today, most arbitrage activity occurs in financial markets. An arbitrageur might take positions in a currency spot rate, forward rate, and two interest rates. Arbitrage transactions of this type are known as cash-and-carry arbitrage. This type of arbitrage can be understood easily as the purchase of oil and the simultaneous sale of an oil futures contract

TABLE 1.1 Orders of Arbitrage

Degree	Definition	Example
First order	A strong, locked-in mechanical relationship in same instrument	Currency triangular arbitrage Location arbitrage Conversions and reversals for European options Crush and crack
Second order	Different instruments, same underlying security	Cash-future arbitrage Program trading Delivery arbitrage Distributional arbitrage (option spreading) Stripping
Second order	Different (but related) underlying securities, same instrument	“Value” trading Bond arbitrage Forward trading Volatility trading
Third order	Different securities, different instruments, deemed to behave in related manner (correlation-based hedging)	Bond against swaps (asset spread) Cross-market relationships Cross-volatility plays Cross-currency yield curve arbitrage

Source: Nassim Taleb, *Dynamic Hedging: Managing Vanilla and Exotic Options* (New York: John Wiley & Sons, Inc., 1997). Reprinted with permission of John Wiley & Sons, Inc.

for the delivery of that oil at a later time. (An arbitrageur would also have to arrange for storage.) In practice, few such simple arbitrage opportunities are available in today's markets. The key idea in arbitrage is the absence of risk. Arbitrageurs eliminate risk by taking positions that in the aggregate offset each other and compensate arbitrageurs for their efforts with a profit. Arbitrageurs are often referred to affectionately through the abbreviation "arb."

Arbitrage in general plays an important economic function because it makes markets more efficient. Whenever a price discrepancy arises between two similar instruments or products, arbitrageurs will seek to profit from the discrepancy. Such discrepancies can arise temporarily in any market— oranges, stocks, lease rates for dry bulk carrier vessels, or sophisticated financial derivatives. As soon as arbitrageurs identify a price discrepancy, they will buy in the cheaper market and sell in the more expensive one. Through their actions, they increase the price in the cheap market and reduce the price in the more expensive market. In due time, prices in the two markets will return to balance. Ultimately, this benefits all other market participants, who know that prices will never diverge significantly from their fair value.

Suppose government regulations were introduced to curtail the activities of arbitrageurs. This would leave market participants with two options:

1. Accept the price in their local market and risk overpaying.
2. Research all other markets to find the "true" value of the product.

In either case, there are costs involved—either the cost of overpaying (or underselling) or the information cost of price discovery. Both outcomes are not optimal and will make markets less efficient.

It is also important to recognize that arbitrage is not a synonym for speculation. Speculators assume market risk in their trades. They will acquire an asset with the hope of reselling it at a higher price in the future. There are two differences between speculation and arbitrage:

1. In speculation, the purchase and acquisition are not made simultaneously, so speculators face prices that can change with the passage of time. They assume full market risk until they sell. Arbitrageurs, however, will execute the purchase and sale simultaneously.
2. Speculators do not know at which price they will be able to sell. There is no guarantee that they will be able to sell at a higher price. Arbitrageurs, however, know exactly at which price they can sell, because the purchase and sale transactions are executed simultaneously.

Similar observations can be made about the difference between arbitrage and price scalping.

In theory, arbitrage is a completely risk-free undertaking. However, most trades referred to as arbitrage in reality involve some risk and should really be referred to as quasi-arbitrage trades. Basis trades in bond futures are one such example. In a basis trade, an arbitrageur buys a bond, sells a bond futures contract, and then delivers the bond upon expiration of the futures contract to the clearinghouse. In reality, the opportunity for a risk-free delivery of a bond into a futures contract, known as a positive net basis in bond parlance, hardly ever exists. Instead, basis traders focus on trading the negative net basis, and they profit as long as they anticipate the cheapest-to-deliver bond correctly. Readers interested in a more detailed description of bond futures basis trades should consult the extensive literature on the topic. Merger arbitrage is another example of such a quasi-arbitrage.

In a strict sense, merger arbitrage is a misnomer because it, too, involves some risk. The type of risk in merger arbitrage is unlike the market risk that financial risk managers are familiar with and build models around: beta risk. Instead, merger arbitrage is about event risk, the event that the merger is not completed. It is not directly related to the movements in the overall market. This does not mean that merger arbitrage is completely independent of the market, especially during large dislocations in the market. However, market movements are not the principal determinant for the successful completion of a merger. It is very difficult to capture event risk mathematically. In most statistical risk models, event risk falls into the unexplained component, the error term. As part of the error term, it is uncorrelated to market risk. It is precisely this property that makes investment strategies based on event risk appealing in the construction of portfolios that seek to reduce exposure to market risk. This topic is discussed in more depth in Chapter 3.

More specifically, the risk in merger arbitrage is primarily the nonconsummation of the announced merger. Much can go wrong between the announcement of a merger and its closing. For example:

- Financing for the transaction can dry up.
- Antitrust authorities can block a transaction.
- The economic environment can change, making the merger less appealing.
- Fraud or other misrepresentations can be discovered.
- A spoiler bidder (a.k.a. white knight) can intervene.

It is the role of the arbitrageur to weigh these risks against the profit opportunity.

Merger arbitrage generally is used to describe a wide range of investment strategies around mergers, many of which have little to do with actual

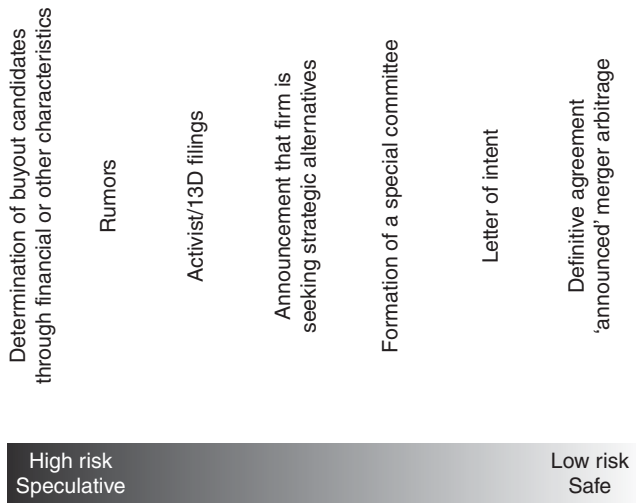


FIGURE 1.3 Risk Spectrum of Merger-Related Investments

arbitrage. These investment tactics can be organized into a risk spectrum (see Figure 1.3) from the most speculative activity, which is the most removed from an actual arbitrage, to least risky, which is merger arbitrage in a proper sense.

At the most risky end of the spectrum is speculation about potential takeover targets. Some investment magazines occasionally publish lists of takeover targets based on financial characteristics, typically priced relative to cash on balance sheet and earnings before interest, taxes, depreciation, and amortization (EBITDA). The idea is that these companies could potentially be bought out based on attractiveness of their accounts for leveraged buyouts. Of course, there is no guarantee that anybody actually will have an interest in acquiring any of the firms on the list. Many more factors must align before a financial buyer might be interested in acquiring a firm.

Of similar riskiness, albeit occasionally more founded in reality, is the Wall Street rumor mill. There is little doubt that the spreading of such rumors is facilitated by investors who hold the relevant stock. Internet message boards have been a particularly fruitful breeding ground for all sorts of takeover speculation. Sometimes rumors enter analyst reports or newspapers. At that level, rumors are often somewhat more reliable—to the extent that the word *reliable* can be used in describing a rumor. Several publications have made themselves a name with sometimes-accurate reports of ongoing acquisition discussions. The *New York Post* as well as the subscription-based service dealReporter both have writers with excellent contacts in the business

community and are often first in breaking pending merger negotiations. One possible explanation for their journalistic success is more prosaic: They simply may be used to leak ongoing negotiations if one party believes that such a leak can improve its position in the negotiations. In the apparel industry, *Women's Wear Daily* has made itself a name with accurate M&A leaks. For example, in August 2005, it reported accurately that J. Jill was to be sold. A few months later, Jill rejected an acquisition proposal from Liz Claiborne and was eventually sold to Talbots.

The high risk of investing in rumored mergers is illustrated by Bloomberg data. After a rumor about a potential merger starts to circulate, the target company's stock jumps initially by 2.9 percent, based on an analysis of 1,875 rumors between 2005 and 2010. However, investors who short such a stock, thereby seeking to profit from its decline, will generate an average return of 1.2 percent in the subsequent month, or an annualized return of 14 percent.⁵ Clearly, buying a rumored takeover company is not a profitable strategy on average. An example of the perils of investing in rumored mergers is the rumored acquisition of Dresser Rand Group by Siemens AG. On July 17, 2014, the German publication *Manager Magazin* reported that industrial group Siemens was interested in acquiring turbine compressor maker Dresser-Rand for \$6.4 billion, and that investment bank Lazard had been retained as financial adviser for this transaction.⁶ It was reported that Siemens was even willing to engage in a hostile transaction should that become necessary. The stock spiked to \$68 on the back of this report. However, on July 31, Siemens laid out a strategic plan *Vision 2020* to its investors that relied on organic growth rather than acquisitions for future expansion. The market reaction to these events can be seen in Figure 1.4. An investor acting on the basis of the press rumor would have suffered a loss of roughly 15 percent by the time of the publication of the strategic plan. Nevertheless, the story was true eventually: On September 21, 2014, Siemens announced an \$83 per share acquisition of Dresser-Rand for a total of \$7.6 billion. Most speculative investors who bought the rumor probably sold after the publication of the strategic plan and would no longer have been invested at the time of the announcement of the actual merger.

A more reliable, although still speculative, merger investment strategy is to follow activist investors who try to get a company to sell itself. Activists file their intentions with the Securities and Exchange Commission (SEC) under Schedule 13D. These filings can be a source of potential merger targets; however, companies that are targets of activists are often in less-than-perfect condition and pose significant investment risk. This is, after all, why activist investors target these firms in the first place. Some commercial services monitor 13D filings and provide additional analysis.

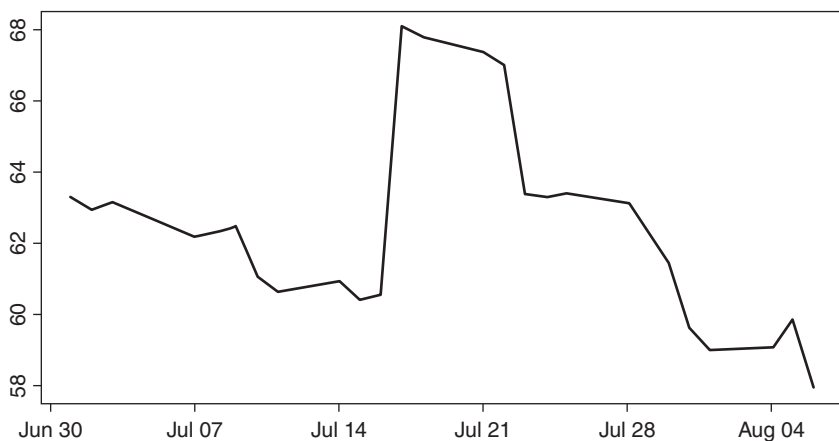


FIGURE 1.4 Stock Price of Dresser-Rand Group around the Rumor of an Acquisition by Siemens

Companies sometimes announce that they are for sale. These announcements are usually phrased as a “search for strategic alternatives, including a sale” or other transaction. Sometimes these announcements come in response to an attack by activist investors; sometimes a company’s board decides on its own to explore the possibility of a sale. Compared to the previously discussed scenarios, investing in a firm whose management is actively pursuing a sale is much safer, but it still is no arbitrage because the company may well be sold for less than it can be purchased for at the time of the announcement. In addition, the outcome of such an investment depends highly on the market environment. In a bull market, it is relatively easy for management to sell the firm at a premium. In contrast, in a bear market, no buyers may materialize and the stock may fall along with the market.

Potential acquirers sometimes enter into a letter of intent before signing a formal merger agreement. Investing after a letter of intent can be very speculative. Most merger partners enter into a definitive agreement right away. Letters of intent are a sign of adverse selection: Either the buyer or the company is not yet quite ready to sign a definitive agreement. In the case of the acquisition of CCA Industries by Dubilier & Co., a private equity firm managed by the son of a cofounder of Clayton, Dubilier & Rice, a letter of intent led to a busted buyout because the acquiring private equity fund could not arrange the requisite financing. Had the firm found it easy to arrange the financing, it would have entered into a definitive agreement rather than a letter of intent in the first place.

Hostile bids are of a similar degree of risk as letters of intent. If the target fends off the bidder successfully, its share price may well revert to a lower, prebid level. Even worse, if an arbitrageur has set up a short position in the acquirer (see Chapter 2), a short squeeze could ensue, leading to losses on both the long and short side of the arbitrage.

The only real merger arbitrage occurs when the arbitrageur enters the position after a definitive agreement has been signed between the target and the acquirer. Arbitrageurs who specialize only in this type of transactions refer to it as announced merger arbitrage to differentiate it clearly from the other, more risky investment styles shown in the risk spectrum in Figure 1.3.

The remainder of the book addresses transactions in which a definitive agreement has been reached.

Merger arbitrage resembles in many respects the management of credit risk. Both are concerned with the management of a large asymmetry in pay-offs between successful transactions and those that incur losses. A typical stock investor is faced with an almost symmetric payoff distribution (see Figure 1.5). The stock price is almost as likely to go up as it is to go down. The likelihood of a small gain is roughly the same as the likelihood of a loss of equal size. Larger changes in value are also almost equally likely. The downside is

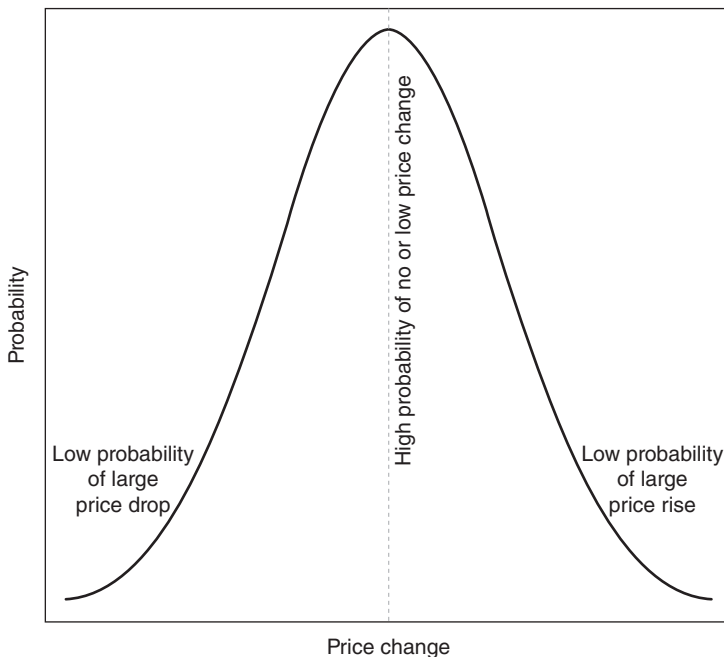


FIGURE 1.5 Payoff Distribution for Stock Investors

unlimited, or limited only by a complete loss of the investment. The upside, however, is unlimited. Every now and then, an investor gets lucky and owns the next Microsoft or Berkshire Hathaway. A small upward drift in stock prices means that in the long run, stocks trend up.

The situation is different for merger arbitrage and credit managers (see Figure 1.6). The upside in a merger is limited to the payment received when the merger closes. Likewise, the most credit managers will receive on a loan or bond is the interest (or the credit spread if they manage a hedged or leveraged portfolio). The downside is unlimited: If a merger collapses or a loan goes into default, a complete loss of capital is possible in a worst-case scenario. The only reason why investors are willing to take risks with such an asymmetric payoff distribution is because the probability of a large loss is very small and the probability of a small gain is very large. The skill in merger arbitrage, as in credit management, is to eliminate investments that have a high probability of generating losses.

Another field in finance has payoff distributions very similar to those of merger arbitrage and credit: option selling. An option seller expects to make only a small return in the form of the option premium but can suffer a significant loss when the option is in the money. Option strategies are often depicted in payoff diagrams, such as that of a short (written) put option in Figure 1.7. In 1873, Henri Lefèvre, the personal secretary of James de Rothschild, pioneered the use of these diagrams for option payoffs. If at expiration the stock price rises above the strike price, the option seller will earn only the premium. However, if the stock price falls below the strike price, the option seller will suffer a significant loss. Merger arbitrage and credit resemble this payoff pattern. Figure 1.8 shows the payoff diagram for

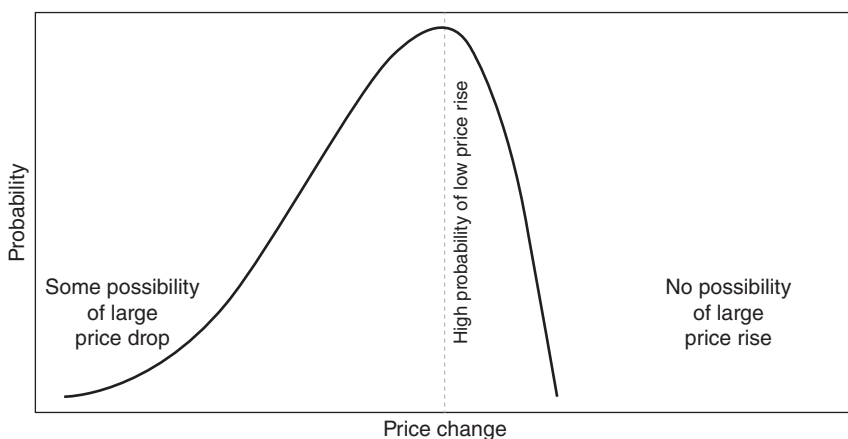


FIGURE 1.6 Asymmetric Payoff Distribution

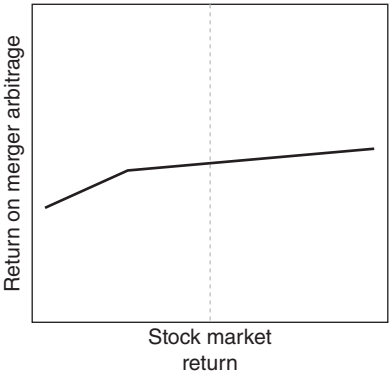


FIGURE 1.7 Lefèvre Diagram of the Put Option Characteristics of Merger Arbitrage

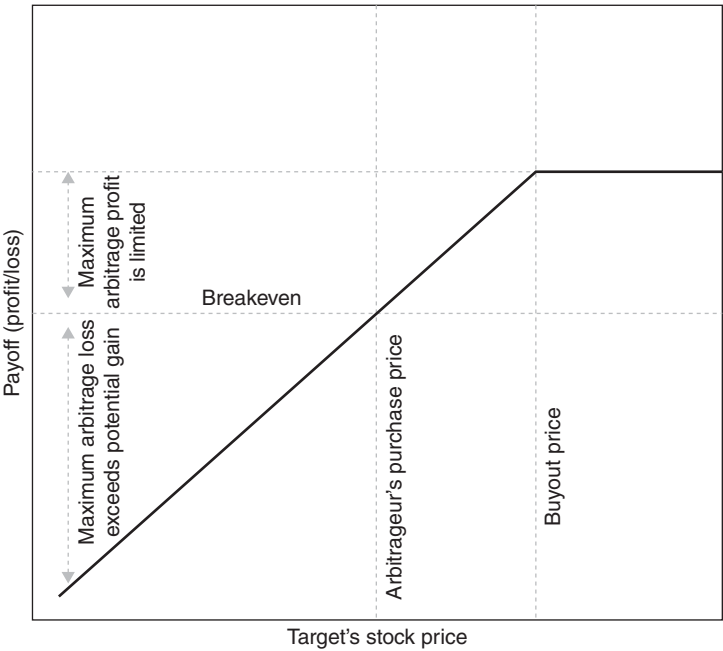


FIGURE 1.8 Lefèvre Payoff Diagram of Cash Mergers

a simple merger arbitrage, where a buyer proposes to acquire a company for cash consideration. If the transaction passes, the arbitrageur will receive only the spread between the price at which she acquired the target's stock and the price at which the firm is merged. However, if the merger collapses, the stock price probably will drop, and the arbitrageur will incur a loss that is much larger than the potential gain if the merger is closed.

From an arbitrageur's point of view, the most important characteristic of a merger is the form of payment received. Therefore, in merger typology arbitrageurs use payment method as the principal classifier. Other merger professionals, such as tax advisers or lawyers, often use other criteria to categorize mergers. For example, tax advisers distinguish between taxable and tax-exempt mergers, whereas legal counsel may distinguish mergers by its antitrust effect. There are three principal categories of mergers and one rare category:

1. *Cash mergers.* The shareholders of the target firm receive a cash consideration for their shares.
2. *Stock-for-stock mergers.* The shares of the target firm are exchanged for shares in the acquirer.
3. *Mixed stock and cash mergers.* The target company's shareholders receive a mix of cash and a share exchange.
4. *Other consideration.* In rare instances, shareholders of the target firm receive debt securities, spun-off divisions of the target, or contingent value rights. The next chapter will show how each of these types of mergers can be arbitrated.

The Mechanics of Merger Arbitrage

This chapter discusses the first three types of merger consideration and how arbitrageurs will set up an arbitrage trade and profit from it:

- Cash mergers
- Stock-for-stock mergers
- Mixed stock and cash mergers

CASH MERGERS

The simplest form of merger is a cash merger. It is a transaction in which a buyer proposes to acquire the shares of a target firm for a cash payment.

We will look at a practical example to illustrate the analysis. An announcement for this type of merger is shown in Exhibit 2.1, which is the press release announcing the purchase of Autonomy Corporation, a U.K.-based infrastructure software firm, by Hewlett-Packard Co. It is typical of announcement of cash mergers.

The terminology used in mergers is quite straightforward: A *buyer*, HP in this case, proposes to acquire a *target*, Autonomy here, for a consideration of £25.50 per share. The difference between the consideration and the current stock price is called the *spread*. When the stock price is less than the merger consideration, the spread will be positive. Sometimes the stock price will rise above the merger consideration, and the spread can become negative. This happens occasionally when there is speculation that another buyer may enter the scene and pay a higher price.

In a cash merger, the buyer of the company will cash out the existing shareholders through a cash payment, in this case £25.50 per share. An arbitrageur will profit by acquiring the shares below the merger consideration and holding it until the closing, or alternatively selling earlier.

Arbitrageurs come across press releases as part of their daily routine search for newly announced mergers. This one was released on August 18, 2011, at 4:10 PM Eastern Standard Time, which was 9:10 PM British Summer Time, when markets both in Europe and the United States were closed.

**EXHIBIT 2.1 PRESS RELEASE ANNOUNCING
ACQUISITION OF AUTONOMY BY HP (EXTRACT)**

PALO ALTO, Calif., and CAMBRIDGE, England, Aug. 18, 2011 – HP (NYSE: HPQ) and Autonomy Corporation plc (LSE: AU. or AU.L) today announced the terms of a recommended transaction under which HP (through an indirect wholly-owned subsidiary, HP SPV) will acquire all of the outstanding shares of Autonomy for £25.50 (\$42.11) per share in cash (the “Offer”). The transaction was unanimously approved by the boards of directors of both HP and Autonomy. The Autonomy board of directors also has unanimously recommended its shareholders accept the Offer.

Based on the closing stock price of Autonomy on August 17, 2011, the consideration represents a one-day premium to Autonomy shareholders of approximately 64 percent and a premium of approximately 58 percent to Autonomy’s prior one-month average closing price. The transaction will be implemented by way of a takeover offer extended to all shareholders of Autonomy. A document containing the full details of the Offer will be dispatched as soon as practicable after the date of this release. The acquisition of Autonomy is expected to be completed by the end of calendar 2011.

[...]

For regulatory reasons, companies announce significant events like mergers after the end of regular market hours or in the morning prior to the opening. This is meant to prevent abuse by investors with slightly better access to news. With the growing importance of after-hours trading and the availability of 24-hour trading of U.S. stocks through foreign exchanges, this restraint has already become somewhat pointless but is still considered best practice.

The first observation an arbitrageur will make is that the stock of Autonomy jumped immediately upon the announcement of the merger. As can be seen in Figure 2.1, Autonomy closed at £14.29 on August 18, the last day before the announcement of the merger. It opened at £25.27 on August 19, quickly peaked at £25.29, and moved down for the rest of the day to close at £24.52. Some unfortunate investors bought shares at the opening price, and because there must be a seller for every buyer, some lucky sellers parted with their investment at the high price for the day. An investor who wanted to enter into an arbitrage on this merger had a realistic chance of acquiring shares at the day’s average price of £24.92. Volume that day was brisk: While

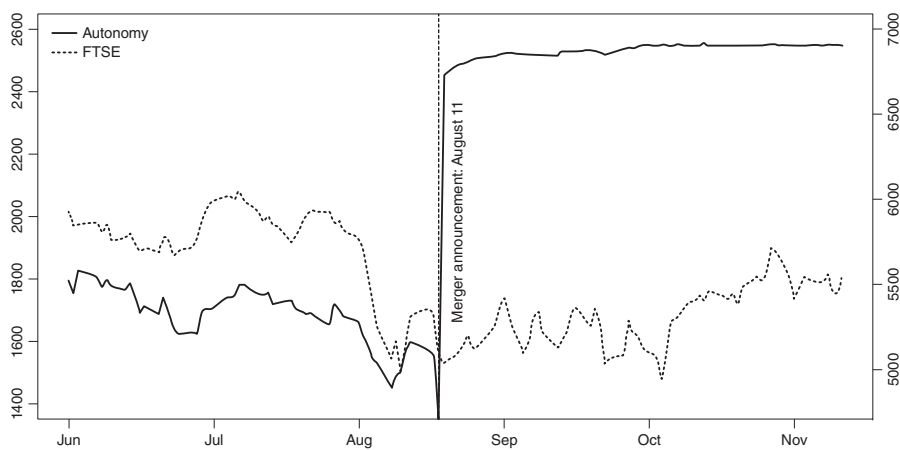


FIGURE 2.1 Stock Price of Autonomy before and after the Merger Announcement

it had averaged just under 1 million shares per day (precisely 0.97) over the prior month, it reached 48.6 million on August 19 and averaged 3.7 million per day over the next month. Therefore, the assumption that an arbitrageur could have obtained that day's average price is reasonable.

A chart like that shown in Figure 2.1 is typical of stocks undergoing mergers. The buyout proposal is generally made at a premium to the stocks' most recent trading price. This leads to a jump in the target's stock price immediately following the proposal. As time passes by and the date of the closing approaches, the spread becomes narrower. This means that the stock price moves closer to the merger price. An idealized chart is shown in Figure 2.2, whereas Autonomy's actual chart is more typical of the behavior of most such stocks. Figure 2.1 also shows the FTSE index, the stock index considered a reference for the London market. Its axis has been scaled (right-hand side) to match the percentage change in Autonomy's stock price. If Autonomy and the FTSE have the same percentage change, then their respective lines will move by the same magnitude in the graphic. It can be seen that prior to the merger announcement, Autonomy's moves on a daily basis match those of the FTSE very closely. After the announcement on

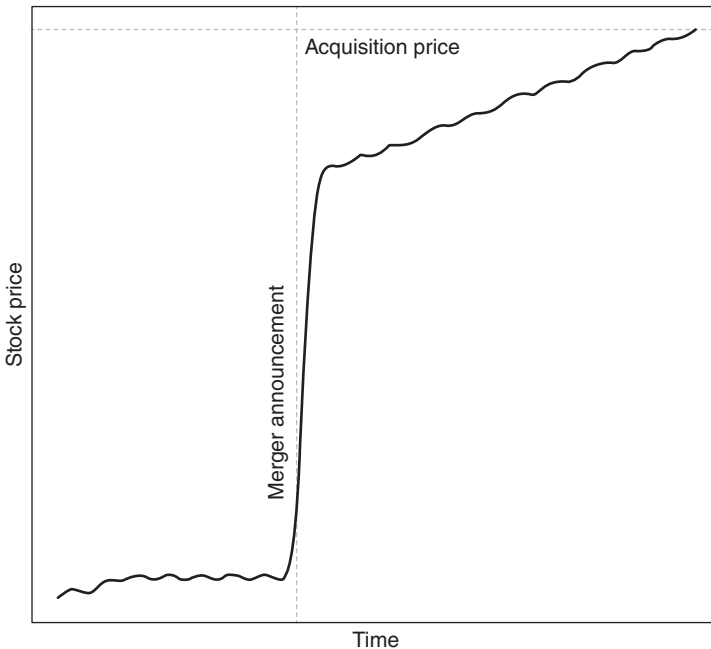


FIGURE 2.2 Idealized Chart of Stock in a Cash Merger

August 19, Autonomy and the index no longer move in tandem. This is a good visual illustration at the micro level of the low correlation that merger arbitrage has with the overall stock market. Fluctuations in the index do not impact Autonomy once it becomes the target of an acquisition.

In some instances, the buyout proposal is made at a discount to the most recent trading price. This rarely happens and is limited to small companies where the buyer is in a position to force the sale. It often leads to litigation and a subsequent increase in the consideration. A transaction at a discount to the last trading price is called a *takeunder*.

INSIDER TRADING

Investors looking at the large jump in Autonomy's stock on August 19 will be tempted to calculate the profits they could have made with a little advance knowledge of the upcoming merger. Insider trading is a crime, not a form of arbitrage.

As readers of the financial press know, every merger cycle is characterized by insiders taking advantage of advance knowledge of mergers. Law enforcement has been successful in prosecuting even the most elaborate insider trading rings. One recent case involved New York bankers who bought options over the Internet through an online brokerage account established in Austria in the name of an elderly woman living in Croatia. Despite the complexity of the scheme, the perpetrators were caught and imprisoned.

Penalties for insider trading are up to 10 years in prison, in addition to monetary penalties, rescission of profits, and potential civil liability in shareholder lawsuits.

Not all that may look like insider trading really is insider trading.

It has become a popular sport among academic economists to create models in order to demonstrate malfeasance in one area of finance or another. A particularly fruitful target appears to be insider trading around merger announcements. One study shows that short-term hedge funds increase their holdings of merger targets in the quarter prior to the announcement of a transaction and conclude from this finding that insider trading must be rampant. However, merger announcements do not occur randomly and do not happen in a

vacuum. Astute observers can predict potential targets when a firm announces that it is reviewing strategic alternatives or has hired an investment bank. CEOs may talk on quarterly earnings calls about their desire to acquire firms, or be acquired. While these methods are far from perfect, they will be good enough to make variables in a quantitative model statistically significant. Similarly, potential acquirers frequently announce their intent to make acquisitions either explicitly or indirectly—for example, by taking out large lines of credit. Again, experienced observers will read the signals from these announcements and may often enough interpret them correctly. Studies that ignore such signals and consider only merger announcements miss relevant variables and yield meaningless results.¹

The problem is certainly not insider trading; it is the misguided attempt to draw overly specific conclusions from naïve linear regression models based on a limited set of data, in particular when much relevant information is not easily quantifiable. It is an old wisdom among statisticians not to fall into the trap of “data availability.” Merger investing clearly has the potential for insider trading; however, considering that insider trading investigations over the last two decades have occurred outside the arbitrage community and concerned mostly individual investors, it is hard to see how there can be a problem.

An arbitrageur who buys the stock on August 19 for £24.92 will receive £25.50 when the transaction closes. The gross profit for the capital gain on this arbitrage is £0.58 on £24.92, or 2.33 percent:

$$R_G = \frac{P_C}{P_P} - 1 = \frac{25.50}{24.92} - 1 = 0.0233 \quad (2.1)$$

where

R_G is the gross return.

P_C is the cash consideration received in the merger.

P_P is the purchase price.

This return will be achieved by the closing of the merger. A key component in investments is not just the return achieved but also the time needed. A more useful measure of return that makes comparisons easier

is the annualized return achieved. The relevant time frame starts with the date on which the arbitrageur enters the position and ends with the date of the closing. The press release stated that the “acquisition of Autonomy is expected to be completed by the end of calendar 2011.” Therefore, the last day of the year, December 31, is used as a conservative estimate for the closing of the transaction. Pedantic arbitrageurs would choose December 30 instead because December 31 was a Saturday in 2011. As there is a large degree of uncertainty about when the transaction will actually close and the choice of the closing date is no more than an educated guess the difference between the two dates is not very meaningful. In practice, the companies will work very hard to close the transaction before the Christmas holiday, so that it is equally justifiable to work with a projected closing date of December 23rd. There are 126 days in the period until the anticipated closing to December 23rd. Two methods can be used to annualize the return: simple or compound interest.

Simple interest

$$R_{AG} = \left(\frac{P_C}{P_P} - 1 \right) \times \left(\frac{365}{t} \right) = \left(\frac{25.50}{24.92} - 1 \right) \times \left(\frac{365}{126} \right) = 0.0674 \quad (2.2)$$

where

R_{AG} is the annualized gross return.
 t is the number of days until closing.

Compound interest

$$R_{AG} = \left(\frac{P_C}{P_P} \right)^{\left(\frac{365}{t} \right)} - 1 = \left(\frac{25.50}{24.92} \right)^{\left(\frac{365}{126} \right)} - 1 = 0.0689 \quad (2.3)$$

where

R_{AG} is the annualized gross return.
 t is the number of days until closing.

Personal preference determines which method is used. Simple interest is useful if the returns are compared to money market yields that are also computed with the simple interest method, such as the London Interbank Offered Rate (LIBOR) or Treasury bills (T-bills). Compound interest is preferable if the result is used in further quantitative studies. If the returns are compared to bond yields, they should be adjusted for semiannual compounding used

in bonds. It is an error encountered frequently, even in research by otherwise experienced analysts and academics, that yields calculated on different bases are compared with one another.

A projected annualized return of 6.74 percent is sufficient to make this investment highly desirable at a time when overnight LIBOR rates in Sterling were around 0.58 percent and the 10-year benchmark Gilt yielded around 2.6 percent.

It is helpful to look at the actual outcome of this merger arbitrage. The Autonomy acquisition closed earlier than an arbitrageur would have assumed: November 14, 2011. With this shorter 88-day time frame to closing, the realized annualized return was 9.65 percent and 10.01 percent for the simple and compound interest methods, respectively. Over the same period, the FTSE returned 10 percent, or an annualized 48.5 percent. However, this better short-term performance came at a price of a volatility that was also significantly higher: Autonomy's daily volatility was 3.4 percent, whereas that of the FTSE was 25 percent.

Autonomy was a non-dividend-paying company. In case a company does pay dividends, there is another source of income that the arbitrageur must factor into the return calculation. For an example, consider Australian bulk grain exporter GrainCorp Limited, which was acquired by Archer-Daniels-Midland Co. for A\$2.8 billion. The per-share acquisition price was only A\$12.20, but an additional A\$1 was to be paid in dividends. Due to the large dividends to be received by shareholders, the stock traded above the A\$12.20 level following the announcement of the merger. On April 30, 2013, four days after the announcement, an arbitrageur could have acquired GrainCorp for a volume weighted average price of \$12.8239, with an expectation that the transaction would close by September 30, 2013, or within 157 days. A back-of-the-envelope calculation for the net return with dividends is to add the dividend to the merger consideration received. This gives an annualized return of 6.95 percent if the compound interest method is used:

$$R_{AN} = \left(\frac{P_C + d}{P_P} \right)^{\left(\frac{365}{t} \right)} - 1 = \left(\frac{12.20 + 1.00}{12.8239} \right)^{\left(\frac{365}{157} \right)} - 1 = 0.0695 \quad (2.4)$$

where

d is the amount of the dividend received.

A more accurate method is the calculation of the internal rate of return (IRR). Spreadsheets have built-in functions to calculate IRRs that require the

	A	B	C	D	E
1	Date		Amount		Explanation
2	30-Apr-13		\$(12.8239)		Investment by the arbitrageur
3	19-Jul-13		\$ 0.25		Special + interim dividends
4	30-Sep-13		\$ 12.95		Merger consideration plus remaining dividend
5					
6	IRR:		7.21%		Internal Rate of Return
7					
8	=XIRR(B2:B4,A2:A4,0.05)				Formula used in C6
9					

FIGURE 2.3 IRR Calculation of Annualized Return in Excel

user to enter each payment with the associated date, as shown in Figure 2.3. It is important to note that the dividends were spread over different payment dates. A first net dividend payment of A\$0.25, consisting of a \$0.20 interim dividend and a \$0.05 special dividend, was to be paid on July 19. The dates of any future dividends were not yet known. Since Australian companies pay semiannual dividends, it is safe to assume that no dividend will be received during the 10-week period between July 19 and the closing on September 30. The prior final dividend was paid on December 17, 2012, so that the final dividend would probably also be paid in the middle of December should the merger not be completed by then. Since the arbitrageur is working for now with a closing date of September 30, it is assumed that the final dividend payment will be made simultaneously with the payment of the merger consideration on September 30.

The resulting projected return is an annualized return of 7.21 percent, slightly higher than in the simplified calculation. The reason for the difference lies in the earlier receipt of the dividend cash flow in the IRR calculation.

The actual date of the dividend payment and its amount are not always known at the time of the announcement of a merger. In this case, the arbitrageur will make an educated guess for the next payment date based on the company's payment frequency and past dividend amounts. Care must be taken when foreign companies are listed in another country. For example, U.S. companies pay dividends with a quarterly frequency. However, U.K. companies listed in the United States and their ADRs pay semiannual dividends to all of their shareholders, even those who purchased the shares in the U.S. market. Similarly, Swiss companies pay only one dividend per year even when listed in the United States. Whenever the dividend information becomes known, such as the announcement of the dividend date or the exact amount, arbs must update their spreadsheets promptly.

Arbitrageurs must be aware of a few limitations of this approach:

- The returns calculated are projections that are highly dependent on the date of the closing of the merger. A delay can quickly lower the return on the investment.
- The projections say nothing about the path that the investment takes on its way to closing. Sometimes, following an initial spike after the merger announcement, a target company's stock weakens. An arbitrageur will then have to book a temporary loss on the investment. Of course, this marked-to-market loss will be reversed eventually when the merger closes. However, the projection cannot make a prediction on the trading dynamics of the stock between purchase and merger closing.

STOCK-FOR-STOCK MERGERS

Stock-for-stock mergers are more complicated than cash mergers. In stock-for-stock mergers, a buyer proposes to acquire a target by paying in shares rather than cash. Sometimes the consideration paid can be a combination of stock and cash. That case is addressed later.

A good example of a stock-for-stock merger announcement is shown in Exhibit 2.2. It is the \$4 billion acquisition of Australian gold miner CGI Mining Ltd by Canada's B2Gold Corp, announced in September 2012.

EXHIBIT 2.2 MERGER ANNOUNCEMENT FOR CGI MINING LTD AND B2GOLD CORP

VANCOUVER, BRITISH COLUMBIA—(Marketwire - Sept. 19, 2012) - B2Gold Corp. (TSX:BTO)(OTCQX:BGLPF)(PINKSHEETS:BGLPF) (NAMIBIAN:B2G) ("B2Gold") and CGA Mining Limited (TSX:CGA) (ASX:CGX) ("CGA") are pleased to announce that they have entered into a definitive Merger Implementation Agreement ("Merger Agreement") to combine the two companies at the agreed exchange ratio of 0.74 B2Gold common shares for each CGA share held, which represents a purchase price of approximately C\$3.18 per CGA share and a premium of 22% using the 20 day volume weighted average share price of each respective company, and a 26% premium over the CGA closing share price on September 17, 2012 based on the closing price for the B2Gold shares as of such date. The transaction is valued at approximately C\$1.1 billion.

The merger will be implemented by way of a Scheme of Arrangement under the Australian Corporations Act 2001 ("Scheme"). Upon completion of the Scheme, existing B2Gold shareholders and CGA shareholders will own approximately 62% and 38%, respectively, of the issued common shares of the combined company.

[...]

Transaction Structure and Terms

[...]

The merger is subject to regulatory, Australian Court, shareholder, and third party approvals, together with other customary conditions. Regulatory approvals include approval by the Australian Foreign Investment Review Board, and ASX and TSX approvals in respect of the issue of new B2Gold shares under the Scheme and as consideration for the cancellation of the CGA options.

A Scheme Booklet setting out the terms of the Scheme, Independent Expert's Report and the reasons for the CGA Directors' recommendations is expected to be circulated to all CGA shareholders. A meeting of CGA shareholders to consider the Scheme is expected to be held later in the year and the Scheme is expected to be implemented shortly thereafter. The Scheme is conditional upon approval by 75% of the number of votes cast, and 50% of the number of CGA shareholders present and voting, at the meeting of CGA shareholders.

In addition to the approval by CGA shareholders, the Scheme is conditional upon B2Gold shareholders approving the issuance of B2Gold shares that will be issued in connection with the Scheme and the cancellation of the CGA options by a simple majority of the B2Gold shares that are voted at a shareholder meeting to be held in reasonable proximity to the CGA shareholder vote.

The Merger Agreement also contains customary and reciprocal deal protection mechanisms, including no shop and no talk provisions, matching and notification rights in the event of a competing proposal and a mutual reimbursement fee payable by B2Gold or CGA in specified circumstances.

In this case, B2Gold is the buyer, CGA the target, and the per share consideration is no longer a fixed cash amount but a fixed number of B2Gold shares. Shareholders of CGA will receive 0.74 shares of B2Gold for each share of CGA that they hold. The number 0.74 is referred to as the exchange ratio or conversion factor.

The dollar amount of C\$3.18 mentioned in the press release refers to the value of the merger on the day before the announcement. This amount

is calculated simply by multiplying the closing price of B2Gold's stock of C\$4.30 on September 18, the last trading day before the announcement, by the conversion factor of 0.74. It is not the value that shareholders will receive at the closing of the merger. The value will vary with the stock price of B2Gold. This distinction is important, because unlike in the case of a cash merger, arbitrageurs face an uncertain dollar value at the time of closing that will vary with B2Gold's stock price. Therefore, they cannot just buy the stock of the target CGA and wait for the merger to close.

The naive approach would be to purchase CGA stock and wait for the merger to consummate. The investor would receive 0.74 shares of B2Gold that it would then need to sell at the prevailing market price, which could be higher or lower. There is no arbitrage in such a transaction. Recall that one of the elements of the definition of arbitrage was that a purchase and sale occur simultaneously. Holding a stock and waiting to sell it for a higher price is speculation, not arbitrage.

Instead, arbitrageurs must lock in the value of the transaction through a short sale. For readers new to short sales, a brief explanation is given here. Additional aspects of short sales are discussed in Chapter 14.

SHORT SALES

Most investors will only buy stocks and sell stocks that they bought previously and hold in their portfolio at the time of the sale. Selling short differs from a normal sale mainly through the timing of the purchase. A short sale is done before the stock is acquired. If a stock declines in value, a short seller will make a profit; if a stock increases in value, the short seller will suffer a loss.

An important component in short selling is the delivery of the stock to the buyer. The buyer is unaware that the stock has been sold short and rightfully expects delivery. In order to make delivery of the stock, the short seller must borrow it from someone who owns it. Most brokerages and clearing firms offer their customers the ability to borrow stock. Online discount brokerages generally have fully automated systems to locate stocks that can be borrowed for their customers. If the stock cannot be borrowed, it cannot be sold short, and the brokerage will inform the customer. In return for lending out the stock, the lender demands a fee, which the arbitrageur must factor into the calculation. This will be discussed later.

The process of closing the short sale—that is, buying back the shares that have been shorted—is a buy-to-cover transaction.

(Continued)

Sometimes the lender of a stock requests its return, for example, if the stock is to be sold. In that case, the customer must either buy to cover or the broker will do a buy-in, meaning that the broker places the buy-to-cover order. If an investor is served with a notice of an upcoming buy-in, it is always better to buy the stock oneself and maintain control over the order than to let the broker execute a buy-in.

Selling short is sometimes portrayed as illegal, dishonest, or un-American. However, in financial markets, arbitrage would not be possible without short selling. Arbitrage involves the simultaneous sale of an asset identical to the one acquired; in many instances, this is possible only through short sales. If there were no arbitrage in financial markets, many products would not be priced correctly, and investors might overpay.

The chief executives of some companies have launched a crusade against naked short selling, which is an illegal activity in which the short seller does not borrow the stock that is sold short. However, regulations to prevent naked short sales are in place already.

One complication in the merger is that even though CGA Mining is an Australian company, it is dually listed in Canada and Australia. An arbitrageur must decide which of the two shares to purchase. A brief glance at the trading volume of the shares on the two exchanges shows that the vast majority of the trading volume occurs in the Canadian market. Another advantage of investing in the Canadian shares is that arbitrageurs do not have to deal with the unfavorable time zone during which the Australian market is open for trading. Executing both sides of the arbitrage simultaneously can be difficult for companies whose shares are listed on different continents and where opening hours overlap only briefly, if at all.

The stock prices of B2Gold and CGA are shown in Figure 2.4. It can be seen that CGA jumped on September 19, the day of the announcement, from a close of C\$2.65 the prior day to an open of C\$2.84, rose as high as C\$2.95 during the day and closed at C\$2.71. B2Gold had closed at C\$4.30 before the announcement and fell to a closing price of C\$3.79. Articles in the press often attribute such a drop of an acquirer's stock price to skepticism about the merger in the investor community. However, it will be seen that the drop is often the byproduct of arbitrage activity.

For simplicity, it will be assumed that an arbitrageur enters the position on September 19 at the closing price. The arbitrageur will execute two transactions:

- 1. Pay C\$2.86 per share to buy 1,000 shares of CGA. This is the volume-weighted average price (VWAP) for the day, a realistic level at which investors could have bought CGA.
- 2. Sell short 740 shares of B2Gold at C\$3.95 per share, which is the VWAP for this stock for September 19.

It helps to examine the cash flows and stock holdings after these two trades. They can be found in Table 2.1. There is an expense of C\$2,860 to acquire the shares of CGA, and proceeds from the short sale amount to C\$2,923.

TABLE 2.1 Cash Flows in CGA/B2Gold Merger

	Stock Transaction	Cash Flow
CGA	+1,000 (purchase)	C\$(2,860)
B2Gold	−740 (short sale)	C\$ 2,923
Net	—	C\$ 63

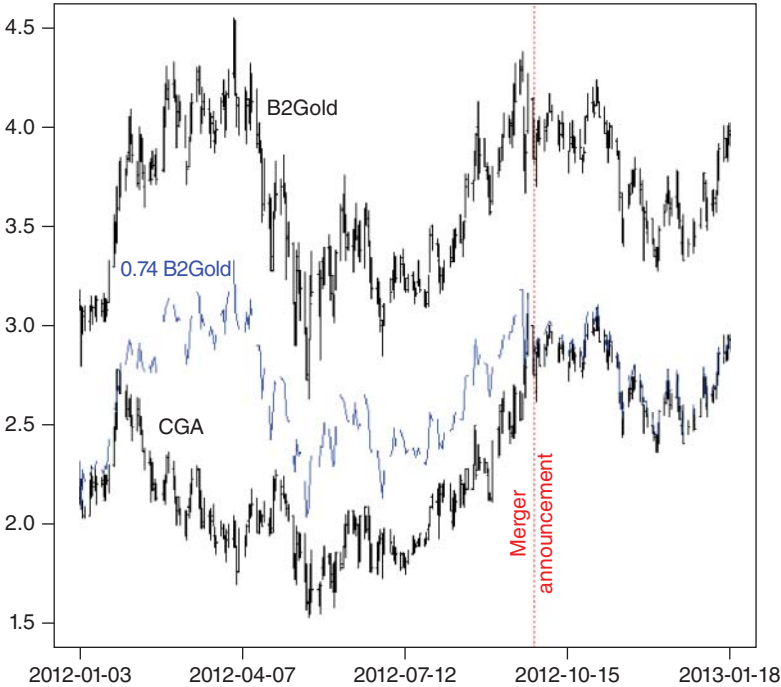


FIGURE 2.4 Stock Prices of B2Gold and CGA

It can be seen that this transaction leaves the arbitrageur with a net cash inflow of C\$63. At the closing of the merger, the 1,000 shares of CGA will be converted into 740 shares of B2Gold. The arbitrageur is then long 740 shares and at the same time short 740. The long position can then be used to deliver shares to the counterparty from which the short position was borrowed. Once the delivery has been completed the arbitrageur no longer has a position in stock, long, or short, but is left with a profit of C\$63.

The example of 1,000 shares is useful for illustrative purposes. Rather than looking at the purchase of 1,000 shares, transactions should be calculated on a per-share basis. Each share of CGA is converted into 0.74 shares of B2Gold. For each share of CGA purchased, the arbitrageur must sell short 0.74 shares of B2Gold. By multiplying the exchange ratio with the stock price of B2Gold, it can be seen that per share of CGA an arbitrageur receives C\$2.923 (0.74×3.95) from the short sale of B2Gold. The spread is hence C\$0.063 per share of CGA.

The return calculation is simplified here in that no dividends need to be taken into account. Neither of the two companies has ever paid any dividends, and there was no reason to believe that this would change prior to the closing of the merger.

$$R_G = \left(\frac{P_S}{P_P} \right) - 1 = \left(\frac{2.923}{2.86} \right) - 1 = 0.022 \quad (2.5)$$

$$P_S = r \times P_A$$

where

P_S is the proceeds received from the short sale, per share of target stock.

P_A is the price at which the acquirer is sold short.

r is the exchange ratio.

The gross return on this arbitrage is 2.2 percent.

Calculation of the annualized return works as in the example of a cash merger. Only the calculation of compound returns is shown here; simple interest can be calculated analogously. Unlike in the prior examples, the arbitrageur cannot find a direct reference to the closing date in the press release. "The merger will be implemented by way of a Scheme of Arrangement under the Australian Corporations Act 2001" gives a valuable hint. As I will explain later, a scheme of arrangement follows a well-defined timetable. A five-month time frame is a reasonable estimate. If we assume a closing date of February 28, 2013, then there are 162 days from September 19, the day the position was entered.

Compound interest

$$R_{AG} = \left(\frac{P_S}{P_P} \right)^{\left(\frac{365}{t} \right)} - 1 = \left(\frac{2.923}{2.86} \right)^{\left(\frac{365}{162} \right)} - 1 = 0.05 \quad (2.6)$$

The expected annualized return at the time of entering the position is 5.0 percent. The actual closing of this merger occurred on January 18, 2013, so the actual return on this arbitrage was an annualized 6.9 percent over 121 days.

One of the advantages of stock-for-stock mergers is the simultaneous holding of a long and a short position. Because of the upcoming merger, the two stocks are highly correlated, so that an increase in CGA's stock price is accompanied by an offsetting increase in B2Gold's. If the two stocks were no longer to move in parallel, the spread would change, and the annualized return available to arbitrageurs would either compress or expand.

However, as the fluctuations in the two stocks mostly cancel out due to the short position in B2Gold, the net result for the arbitrageur is a much smoother ride than what an index investor experiences. The evolution of the spread of the CGA/B2Gold merger is shown in Figure 2.5. In the

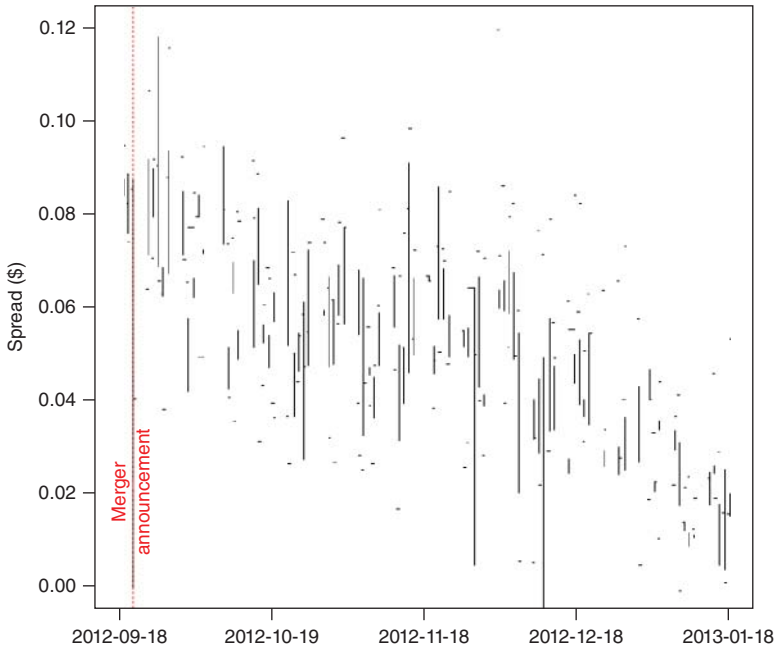


FIGURE 2.5 Evolution of the CGA/B2Gold Spread

case of a cash transaction, the spread depends on only one variable. In a stock-for-stock merger, it depends on two stock prices. The spread does trend toward zero over time. The spread is not very smooth on an absolute basis. But compared to the gyrations in the index over the same time, the volatility is much lower.

It is clear that short sales from arbitrage activity can lead to significant selling pressure on the stock of a buyer after the announcement of a stock-for-stock merger. Often analysts and journalists attribute the drop of a buyer's stock after a merger announcement to fundamental reasons, such as the prospect for the merged entity. One account of the trading activity following the announcement of the merger of Trane Inc. with Ingersoll-Rand is shown in Exhibit 2.3. Ingersoll-Rand fell over 11 percent following the announcement of the merger. The fundamental reasoning behind this merger appeared solid. Some reports suggested that the combination of the two firms created the number-two air-conditioning company in the United States. The long-term prospects of Ingersoll-Rand clearly were not bad and would not have justified an 11 percent drop. It can be explained only by arbitrage activity. Experienced investment bankers warn company management during merger negotiations of the risk to their stock price and suggest structures with a cash component to a stock-for-stock merger in order to reduce short selling.

Merger arbitrage is attractive to many investors as a portfolio diversifier because of its long/short components. It is assumed that these positions immunize the portfolio against fluctuations in the overall stock market and leave only uncorrelated event risk to the investor, and therefore, the

EXHIBIT 2.3 ACCOUNT OF INGERSOLL-RAND'S ACQUISITION OF TRANE FOR \$10.1 BILLION, CREATING CLIMATE CONTROL BEHEMOTH

TRENTON, N.J. (AP)—In a deal worth a cool \$10 billion, Ingersoll-Rand Co. will acquire Trane Inc. and create one of the world's largest makers of commercial and residential home air conditioners, refrigerators for trucks and stores, and other climate control products.

But some Ingersoll-Rand shareholders, who had expected the cash-rich company to pour some money into share repurchases, seemed disappointed with the acquisition announced Monday and sold Ingersoll-Rand stock, driving shares down sharply.

portfolio is market neutral. This argument is revisited in more detail in Chapter 3. Nevertheless, at this point, a short discussion of one of the pitfalls of long/short positions is necessary. A constant percentage spread can lead to dollar paper losses in an extreme bull market, if both the long and the short position increase, but the percentage spread remains constant. Table 2.2 illustrates the problem of a hypothetical increase of CGA and B2Gold when the percentage spread remains constant throughout the increase. The losses discussed here are temporary only and will eventually be recovered once the merger closes.

Table 2.2 starts in the first row with the actual spread of 2.20 percent at prices of C\$2.86 and C\$3.95 for CGA and B2Gold, respectively. It shows the profit and loss (P&L) relative to a position entered at the baseline of C\$2.86 and C\$3.95. If both CGA and B2Gold rise and the percentage spread remains constant, then the spread expressed in dollars must rise (2.2 percent of \$5.72 is more than 2.2 percent of \$2.86). The simulated price rise in

TABLE 2.2 Losses Suffered at a Constant Percentage Spread in a Rising Market

	CGA	B2Gold	Value at Exchange Ratio	Spread (\$)	Spread (%)	Loss (\$)
Market Increase	2.86	3.95	2.923	0.063	2.20%	0
5%	3.00	4.15	3.069	0.066	2.20%	0.003
10%	3.15	4.35	3.215	0.069	2.20%	0.006
15%	3.29	4.54	3.361	0.072	2.20%	0.009
20%	3.43	4.74	3.508	0.076	2.20%	0.013
25%	3.58	4.94	3.654	0.079	2.20%	0.016
30%	3.72	5.14	3.800	0.082	2.20%	0.019
35%	3.86	5.33	3.946	0.085	2.20%	0.022
40%	4.00	5.53	4.092	0.088	2.20%	0.025
45%	4.15	5.73	4.238	0.091	2.20%	0.028
50%	4.29	5.93	4.385	0.095	2.20%	0.031
55%	4.43	6.12	4.531	0.098	2.20%	0.035
60%	4.58	6.32	4.677	0.101	2.20%	0.038
65%	4.72	6.52	4.823	0.104	2.20%	0.041
70%	4.86	6.72	4.969	0.107	2.20%	0.044
75%	5.01	6.91	5.115	0.110	2.20%	0.047
80%	5.15	7.11	5.261	0.113	2.20%	0.050
85%	5.29	7.31	5.408	0.117	2.20%	0.054
90%	5.43	7.51	5.554	0.120	2.20%	0.057
95%	5.58	7.70	5.700	0.123	2.20%	0.060
100%	5.72	7.90	5.846	0.126	2.20%	0.063

Table 1.3 shows that a spread of \$0.063 will widen to \$0.126 per share if CGA were to double in value to \$5.72 per share. Although B2Gold's stock appreciates by the same percentage as CGA, the difference in dollar terms increases. At \$5.72 per share, the arbitrageur's portfolio would record a loss of \$0.063 per CGA share (last column).

This scenario does not imply inefficiency in the market. If the hypothetical increase in spreads were to occur on the same day as the position was entered, the annualized return would be unchanged, because the percentage spread is the same whether CGA trades at \$5.72 or at \$2.86.

It is clear that these losses are only paper losses that are temporary. As long as the merger eventually closes, the arbitrageur will realize a gain of \$0.063. Only those who panic and close their position early will suffer a real loss. The arbitrageur is short 0.74 shares of B2Gold for every long position of CGA, and the cash changed hands already when the trade was made. Therefore, the eventual profit is certain as long as the merger closes. In the meantime, however, the account will show a loss.

Whether or not an arbitrageur wants to hedge against paper losses is a matter of personal preference. Any hedging transactions will entail costs and will reduce the return of the arbitrage. Because the spread eventually will be recovered, it makes little sense to hedge against transitory marked-to-market losses.

Now what would happen if stock prices were to fall? It can be extrapolated from this discussion that in the case of a fall in stock prices, the dollar spread will tighten, and the arbitrageur will record a gain even though the percentage spread and the annualized return would remain unchanged.

Sometimes shareholders hold a number of target shares that does not get converted to a round number of buyer shares. For example, a holder of 110 shares of CGA would receive 81.4 shares of B2Gold. However, the fractional 0.4 shares cannot be traded or issued because corporations have whole shares only. (Note that mutual funds are different, even though they are also organized as corporations.) Therefore, companies will liquidate fractional shares and issue only full shares. The investor in our example would receive 81 shares of B2Gold and a cash payment for the value of the fractional 0.4 shares. The cash payment depends on the share price of B2Gold at the time of the closing of the merger.

In addition to earning the spread, a stock-for-stock merger has another source of income. When arbitrageurs short a stock, they receive the proceeds of the short sale. In the example from Table 2.1, the arbitrageur received C\$2,923 from the short sale of B2Gold. These funds are on deposit at the brokerage firm that executed the short sale. Arbitrageurs can negotiate to receive interest on this deposit. This is easier said than done. In the author's experience, most retail brokerage firms do not pay interest on the proceeds of

short sales. At the time of writing, one retail brokerage firm advertised that it had paid interest on balances of short proceeds in excess of \$100,000. Institutional investors are better off. They are always offered interest on the proceeds. This is referred to as *short rebate* in industry parlance.

The example of the CGA/B2Gold merger can illustrate the effect of the short rebate on merger arbitrage returns. Assume that the short rebate is 1 percent. At the time of writing, in a period of historically low interest rates, this would be a high rate. In normal interest rate environments, short rebates are higher and match LIBOR rates. In fact, it is quite normal for rates for short rebates to be below interest rates. In fact, the spread between short rebates and margin rates charged customers who borrow to buy stock is an important source of revenue for brokerage firms. The interest earned on the \$2,923 over the 140-day period until the closing of the merger would have been

$$i = \$2,923 \times 0.01 \times \frac{140}{365} = \$11.21 \quad (2.7)$$

This would increase the merger profit from \$63 to \$74.21—an increase of almost 18 percent. For simplicity, simple interest is used in this calculation. Most brokers pay interest monthly, so monthly compounding should be used.

The annualized spread increases by the amount earned on the short rebate:

$$\begin{aligned} R_{AG} &= \left(\frac{P_S \times (1 + r_s)^{\left(\frac{t}{365}\right)}}{P_P} \right)^{\left(\frac{365}{t}\right)} - 1 = \left(\frac{2.923 \times (1 + 0.01)^{\frac{140}{365}}}{2.86} \right)^{\left(\frac{365}{140}\right)} - 1 \\ &= 0.0691 \end{aligned}$$

where r_s represents the interest paid on the short rebate.

As discussed in Chapter 3, returns on merger arbitrage tend to be correlated with interest rates as a result of the impact that short rebates have on spreads.

The CGA/B2Gold merger was easy to analyze because neither stock pays any dividends. Stocks paying dividends can be tricky to handle when sold short, because the short seller must pay the dividend on the stock. The long position will generate a dividend; the short position will cost a dividend. A crude calculation to determine the net effect of dividends on the annualized spread is to subtract the dividend yield of the short position from the dividend yield of the long position, and add the result to the annualized return of the merger arbitrage. However, this method can give incorrect results, especially for mergers with a short horizon to closing. The method can be

used as a first approximation, but arbitrageurs always must consider the actual dividend dates and dividend amounts.

The gross return in the presence of dividends is calculated for a long/short merger arbitrage in this way:

$$R_G = \left(\frac{P_S}{P_P + d_P} \right) - 1 = \left(\frac{2.923}{2.86} \right) - 1 = 0.022 \quad (2.8)$$

$$P_S = r(P_A - d_S)$$

where

d_S are the total dividends to be paid on the short sale.

d_P are the total dividends to be received on the purchased (long) stock.

Mixed Cash/Stock Mergers

Many buyers want to limit dilution in the acquisition of a target company or have access only to an amount of cash insufficient to purchase the target entirely for cash. They structure the acquisition of a target for a dollar amount plus shares, or they offer target shareholders the option to choose between cash and stock, typically with a forced proration.

In the former case, every shareholder of the target company is treated equally. Exhibit 2.4 shows the announcement of the merger of Alterra Capital Holdings Ltd. with Markel Corp, announced in December 2012. This merger was mentioned briefly earlier to illustrate the effect that arbitrage-related short selling can have on a company's stock price immediately following the announcement of a merger.

EXHIBIT 2.4 ANNOUNCEMENT OF ACQUISITION OF ALTERRA CAPITAL HOLDINGS LTD BY MARKEL CORP.

RICHMOND, Va. & HAMILTON, Bermuda—(BUSINESS WIRE)—

Markel Corporation (“Markel”) (MKL) and Alterra Capital Holdings Limited (“Alterra”) (NASDAQ: ALTE; BSX: ALTE.BH) announced today that their respective boards of directors have each unanimously approved a definitive merger agreement. Under the terms of the agreement, the aggregate consideration for Alterra is

approximately \$3.13 billion, based on a closing price of \$486.05 for Markel common stock on December 18, 2012.

At closing, each Alterra common share will be converted into the right to receive 0.04315 Markel common shares (with cash paid for fractional shares) plus a cash payment of \$10. Following the merger, Markel's existing shareholders will own approximately 69% of the combined company on a fully diluted basis, with Alterra's shareholders owning approximately 31%. Completion of the transaction is contingent upon customary closing conditions, including shareholder and regulatory approvals, and it is expected to close in the first half of 2013.

Alterra's shareholders will receive \$10 plus 0.04315 share of Markel. Alterra's shares traded on December 19 at a VWAP of \$28.58, whereas those of Markel traded at a VWAP of \$444.97. An arbitrageur entering a position at these prices would make a gross return of 2.17 percent:

$$R_G = \left(\frac{P_S + P_C}{P_P} \right) - 1 = \left(\frac{0.04315 \times 444.97 + 10.00}{28.58} \right) - 1 = 0.0217 \quad (2.9)$$

where

$P_S = r \times P_A$ as before.

P_C is the cash component received in the merger.

This gross return should be annualized by one of the methods explained earlier. An arbitrageur would also have to factor in the receipt of at least one additional dividend of \$0.16 / share, which, based on Alterra's dividend history, would be paid in the middle of February 2013. A second dividend may be paid in the middle of May, if the merger has not closed by then.

A different incarnation of mixed cash/stock transactions does not specify a set dollar amount to be received per share but instead sets a fraction of the total consideration that will be paid in cash. Frequently used ratios are 50/50 cash/stock, 40/60, or 20/80.

The acquisition by Vulcan Materials Company of Sunoco Inc. by Energy Transfer Partners, LP had the frequently used ratio of 50 percent cash and 50 percent stock. The press release is shown in Exhibit 2.5.

EXHIBIT 2.5 ACQUISITION OF SUNOCO INC. BY ENERGY TRANSFER PARTNERS, LP.

DALLAS & PHILADELPHIA—(BUSINESS WIRE)—Apr. 30, 2012—Energy Transfer Partners, L.P. (NYSE: ETP) and Sunoco, Inc. (NYSE: SUN) today announced that they have entered into a definitive merger agreement whereby ETP will acquire Sunoco in a unit and cash transaction valued at \$50.13 per share, or a total consideration of approximately \$5.3 billion, based on ETP's closing price on April 27, 2012. This combination will create one of the largest and most diversified energy partnerships in the country by expanding ETP's geographic footprint and strengthening its presence in the transportation, terminaling and logistics of crude oil, NGLs and refined products.

The merger consideration, which consists of \$25 in cash and 0.5245 of an ETP common unit, or approximately 50 percent cash and 50 percent ETP common units, represents a 29 percent premium to the 20-day average closing price of Sunoco shares as of April 27, 2012.

[...]

Other Transaction Details

Under the terms of the merger agreement, which has been unanimously approved by the boards of directors of both companies, Sunoco shareholders can elect to receive, for each Sunoco common share they own, either \$50.00 in cash, 1.0490 ETP common units, or a combination of \$25.00 in cash and 0.5245 ETP common units. The aggregate cash paid and common units issued will be capped so that the cash and common units will each represent 50 percent of the aggregate consideration. The cash elections and common unit elections will be subject to proration to satisfy this cap. Upon closing, Sunoco shareholders are expected to own approximately 20 percent of ETP common units. In addition, \$965 million of Sunoco's existing notes will remain outstanding.

Mixed transactions with election rights can be difficult to calculate because they require some guesswork. Arbitrageurs are used to making assumptions, as we have seen in the estimation of closing dates and now again when dealing with cash/stock proration ratios. Shareholders can choose to receive either cash or stock. Arbitrageurs and some shareholders will pick the option that is worth the most. In this transaction, if the value of Energy Transfer Partners shares to be received is above \$50.00 at the time

of the merger, profit-maximizing shareholders will want to receive shares. If the value of these shares is less than \$50, shareholders will prefer \$50 in cash instead of the less valuable shares. In either case, no shareholder will accept a blend of shares and stock. The buyer would either have to pay all stock or all cash, which is not what it intended to do. For this reason, these transactions have a proration provision, so that the buyer of the firm can make the blended cash/stock payment of 50 percent stock and 50 percent cash. However, not all shareholders will seek to be paid in cash when the shares are below \$50. Some shareholders fail to make a selection and will be allocated the less valuable consideration by default. Many long-term shareholders will select shares even when the cash payment is more valuable because they intend to continue to hold the shares. Strategic investors or managers will hold on to their shares. Some asset allocators may find it easier to roll their shares into the buyer's stock than reinvest themselves. Finally, the most important group selecting stock rather than cash are long-term holders who have significant appreciation in their holdings of target stock. They would be faced with an immediate tax bill if they realized a gain in the merger. By selecting stock, they can defer realization of a taxable gain into the future. Because all of these investors have a preference for stock even if the cash component is worth more at the time of the merger, slightly more cash will be paid to shareholders who select cash than if proration were applied at the stated ratio.

In the case of Sunoco, 73.92 percent of shareholders elected to receive cash, 4.25 percent elected all stock, 2.61 percent requested to receive the 50/50 proration, and the remaining 19.22 percent did not make a selection. Shareholders who did not make a selection also received the 50/50 mix. Out of luck were shareholders who elected to receive all cash: Due to proration, they received \$26.47 in cash and 0.49373 shares of Energy Transfer Partners. This shows that aiming for one of the extremes—all cash or all stock—can be a risky undertaking. An arbitrageur who hoped for an all-cash allocation would have ended up with almost half of the position exposed to the market—not quite an arbitrage. Most of the time, it is optimal to target the prorated allocation. With some experience and a study of the shareholder base, it is possible to make a rough estimate of the final proration.

Arbitrageurs must use experience and guesswork to determine the ratio that is most likely to apply. In the next discussion, it is assumed for simplicity that the ratio of cash/stock that the arbitrageur will receive is that of the stated proration factor.

To calculate the gross return,

$$R_G = (R_S \times P_S + R_C \times P_C) \div P_P - 1 \quad (2.10)$$

where

R_S is the ratio of stock to be received.

R_C is the ratio of cash to be received (obviously, $R_S + R_C = 1$).

P_S is the proceeds received from the short sale, per share of target stock.

As before, $P_S = r \times P_A$.

This gross return can be annualized by analogy with the previous examples.

Mergers with Collars

The CGA/B2Gold merger discussed above had a fixed exchange ratio of 0.74. This exposes both CGA and B2Gold to a certain market risk: If the value of B2Gold's stock increases significantly, then the 0.74 shares that CGA shareholders will receive for each share will also increase in value. In this case, the value of the transaction will be much higher than \$4 billion. While CGA shareholders will be happy with this outcome, the investors in B2Gold will wonder whether they could have acquired CGA by issuing fewer shares and suffering less dilution. Conversely, if B2Gold's stock falls, then CGA's shareholders will receive less valuable shares for each B2Gold share. They would have been better off with a higher exchange ratio.

For this reason, many merger agreements include provisions to fix the value of stock received by the target company's shareholders at a set dollar amount or at a fixed exchange ratio. The exchange ratio is adjusted as a function of the share price of the acquirer. Two reference prices are determined.

Two types of collars are common:

1. *Fixed-value collars.* Target shareholders will receive a set dollar value's worth of shares of the acquirer as long as the acquirer's share price is within a certain collar. This collar is buyer-friendly. The exchange ratio can change within the collar range. This type of collar is so common that the term *fixed value* is often dropped. References to a generic "collar" relate to fixed-value collars.
2. *Fixed-share collars.* A set number of shares is given to the target shareholders as long as the acquirer's share price is within a certain range. If the acquirer's share price rises above the maximum, the exchange ratio declines. This collar is seller-friendly. The exchange ratio is fixed within the collar range.

The November 2012 acquisition of investment bank KBW, Inc., by Stifel Financial Corp. contained a fixed-value collar, shown in the press release in Exhibit 2.6.

In this acquisition, KBW shareholders will receive a package worth \$17.50 as long as the share price of Stifel is between \$29 and \$35. In this case, they will receive \$10 in cash and \$7.50 worth of Stifel stock. For example, if the price of Stifel is \$31, they will receive \$10 plus 0.2419 shares of Stifel. The ratio of 0.2419 is calculated by dividing \$7.50 by \$31. If the price of Stifel stock falls below \$29, then the ratio will be fixed at 0.2586, so if Stifel stock is worth only \$25, then the value received by KBW shareholders will be only \$16.47 (\$10 cash, plus Stifel stock worth 25×0.2586). Below the lower collar boundary, KBW shareholders will

EXHIBIT 2.6 ACQUISITION OF KBW, INC. BY STIFEL FINANCIAL CORP.

Stifel Financial Corp. (NYSE: SF) and KBW, Inc. (NYSE: KBW) today announced that they have entered into a definitive merger agreement to create the premier middle-market investment bank with a specialized focus on the financial services industry.

Under the terms of the agreement, which was unanimously approved by the boards of directors of both companies, KBW shareholders will receive \$17.50 per share, comprised of \$10.00 per share in cash and \$7.50 per share in Stifel common stock. Additionally, holders of certain restricted KBW shares, that will continue to vest post closing, will receive \$17.50 in Stifel common stock. The stock component of the consideration is fixed at \$7.50 per share, subject to a collar, provided that the volume weighted average closing price of Stifel common stock for the ten days prior to closing is between \$29.00 and \$35.00 per share. If the volume weighted average price rises above \$35.00 per share, the exchange ratio will be fixed at 0.2143 shares of Stifel common stock for each share of KBW, and if it falls below \$29.00 per share, the exchange ratio will be fixed at 0.2586 shares of Stifel common stock for each share of KBW.

The transaction is valued in excess of \$575 million, which includes the outstanding shares and restricted stock awards of KBW. Approximately \$250 million in excess capital on KBW's balance sheet is expected to be immediately available to Stifel upon closing.

participate in any depreciation of Stifel shares, as they would if the ratio had been fixed, and will receive less value than \$17.50. Similarly, for a share price above the upper boundary of the collar, the value received will exceed \$17.50. For example, for a price of Stifel shares of \$40, KBW shareholders will receive a package worth \$18.57 (\$10 cash, plus Stifel stock worth $\$40 \times 0.2143$). Certainty as to the value exists only within the collar.

Readers are fortunate that the press release in Exhibit 2.6 is very explicit about the boundary prices of the collar. Exhibit 2.7 shows an example of a merger agreement that forces arbitrageurs to do a little extra math. An arbitrageur has to calculate the reference values for the collar from the information in the merger agreement. The value is fixed at \$18.06 per share in the collar, and the exchange ratio can fluctuate between 0.4509 and 0.4650. The two reference prices are calculated as

$$\$18.06 \div 0.4650 = \$38.84 \text{ and } \$18.06 \div 0.4509 = \$40.05$$

EXHIBIT 2.7 ACQUISITION OF WINDROSE MEDICAL PROPERTIES BY HEALTH CARE REIT

Merger agreement, section 2.2

(c) Conversion of Shares. Each Share issued and outstanding immediately prior to the Merger Effective Time (other than Shares to be cancelled in accordance with Section 2.2(b)) shall be converted into a fraction of a duly authorized, validly issued, fully paid and non-assessable share of common stock, par value \$1.00 per share, of Parent (a "Parent Share" and collectively, the "Parent Shares") equal to the quotient determined by dividing \$18.06 by the Parent Stock Price (as defined below) and rounding the result to the nearest 1/10,000 of a share (the "Exchange Ratio"); provided, however, that if such quotient is less than 0.4509, the Exchange Ratio will be 0.4509 and if such quotient is greater than 0.4650, the Exchange Ratio will be 0.4650. For the purposes of this Section 2.2, the term "Parent Stock Price" means the average of the volume weighted average price per Parent Share on the NYSE, as reported on Bloomberg by typing "HCN.N <EQUITY> AQR <GO>", for ten (10) trading days, selected by lot, from among the fifteen (15) consecutive trading days ending on (and including) the date that is five trading days prior to the Effective Times.

This is an uncharacteristically narrow collar. As long as Health Care REIT's stock price remains between \$38.84 and \$40.05, Windrose's shareholder will receive \$18.06 worth of Health Care REIT's stock. The range for this collar is less than 5 percent of the buyer's stock price. Typical are ranges of 10 or 15 percent. It can be seen from chart in Figure 2.6 that Health Care REIT was fluctuating quite wildly during the merger period and exceeded the upper limit of the collar by the time of the closing on December 20, 2006.

Arbitrageurs must hedge mergers with collars dynamically. If the merger is hedged with a static ratio and the stock price of the acquirer moves, the arbitrageur will incur a loss. For example, 10 days after the announcement, Stifel traded below \$29 and an arbitrageur investing at that time would have hedged with a ratio of 0.2586. By January 2013 and until the closing, Stifel

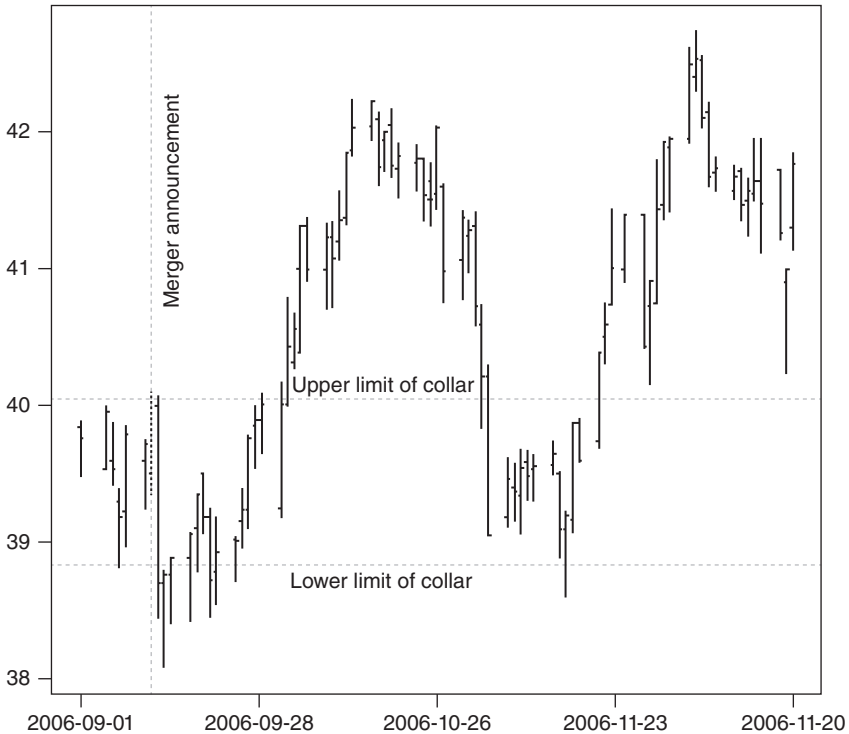


FIGURE 2.6 Fluctuation of Health Care REIT's Stock Price Prior to the Merger

stock traded above \$35. Therefore, at the time of the closing, the arbitrageur would have received only 0.2143 shares. The arbitrageur would have had an excess short position of 0.0443 shares. With Stifel worth \$38.75 on the day of the closing of the merger, an arbitrageur would have had to purchase these extra short shares at a cost of \$1.717 per share of KBW. This would have reduced the profitability of the arbitrage by about 10 percent, and led to a loss. Conversely, if an arbitrageur enters into a position when it trades at the upper bound of the collar and the stock price declines, there will be an insufficient number of shares sold short. This underhedging results in the short position not generating enough return to offset losses on the long position of the arbitrage. The correct way to hedge a collar is dynamically, in the same way that an option collar is hedged by an option market maker.

In the case of the Windrose/Health Care REIT merger, the collar is very tight and the hedge ratio does not change very much. It would be possible to enter an arbitrage position with a static hedge ratio and assume the modest risk that the position needs to be adjusted once the exact conversion ratio is known. An arbitrageur will weigh the potential transaction costs of such a strategy against the spread that can be earned. However, such a narrow collar is an exception rather than the norm, so this question hardly ever arises.

A more accurate method for hedging transactions with collars is delta hedging. Both discontinuities in the payoff diagram of collars lead to optionality (see Figure 2.7). The discontinuity to the left of a fixed-value collar resembles the payoff diagram of a short put position, whereas the discontinuity to the right resembles a long call position. In a delta-neutral hedge, the arbitrageur calculates the sum of the deltas of these two options and shorts the number of shares given by that net delta. A drawback of delta-neutral hedging is that it requires constant readjustment with fluctuations in the stock price and as time passes. However, for wide collars with exchange ratios that change significantly, delta-neutral hedging is the best method to hedge. For further details on the concept of delta hedging, the reader should consult texts dealing with options.

Fixed share collars are less common than fixed-value collars. One recent example of this rare structure is shown in Exhibit 2.8. It is the September 2010 acquisition of AirTran Holdings, Inc. by Southwest Airlines Co.

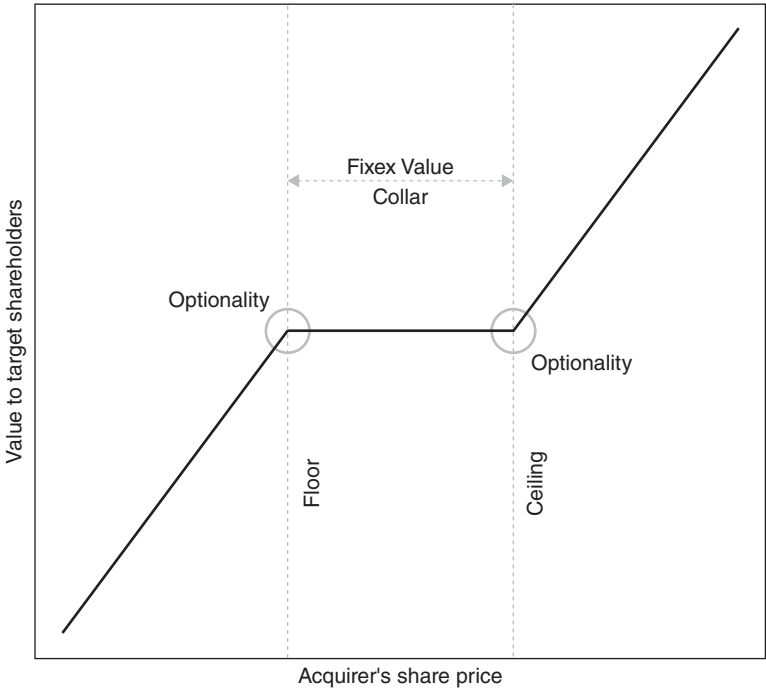


FIGURE 2.7 Optionality in Mergers with a Fixed-Value Collar

**EXHIBIT 2.8 ACQUISITION OF AIRTRAN HOLDINGS, INC.
BY SOUTHWEST AIRLINES CO.**

[...]Subject to the terms and conditions of the Merger Agreement, which has been approved by the boards of directors of the respective parties, if the Merger is completed, each outstanding share of AirTran common stock (including previously unvested restricted shares of AirTran common stock) will be converted into the right to receive a fraction of a share of Southwest common stock equal to the Exchange Ratio (as defined below) (the “Base Per Share Stock Consideration” and, as the same may be adjusted as discussed below, the “Per Share Stock Consideration”) and \$3.75 in cash, without interest (the “Base Per Share Cash Consideration” and, as the same may be adjusted as discussed below, the “Per Share Cash Consideration”). The Per Share Stock Consideration and the Per Share Cash Consideration are collectively referred to herein as the “Merger Consideration.”

The Exchange Ratio will be determined as follows:

- i. In the event that the average of the last reported sales prices for a single share of Southwest common stock on the New York Stock Exchange (the “NYSE”) for the 20 consecutive full trading days ending on (and including) the third trading day prior to the closing date of the Merger (the “Southwest Average Share Price”) is less than \$10.90, the Exchange Ratio will equal (A) \$3.50 divided by (B) the Southwest Average Share Price, rounded to the nearest thousandth.
- ii. In the event that the Southwest Average Share Price is equal to or greater than \$10.90 but less than or equal to \$12.46, the Exchange Ratio will be 0.321.
- iii. In the event that the Southwest Average Share Price is greater than \$12.46, the Exchange Ratio will equal (A) \$4.00 divided by (B) the Southwest Average Share Price, rounded to the nearest thousandth.

In addition, in the event that the Southwest Average Share Price is less than \$10.90, Southwest may elect to deliver, as Merger Consideration, an additional amount of cash, an additional number (or fraction) of shares of Southwest common stock, or a combination of additional cash and additional number (or fraction) of shares of Southwest common stock (which shares will be valued based on the Southwest Average Share Price) such that, after giving effect to such election, the aggregate value of the Merger Consideration (valuing Southwest common stock based on the Southwest Average Share Price) is equal to \$7.25.

Based on the closing price of Southwest common stock on the NYSE on September 24, 2010, the last trading day before public announcement of the merger, the Merger Consideration represented approximately \$7.69 in value for each share of AirTran common stock. [...]

This collar is straightforward. If Southwest Airlines’ share price falls below \$10.90, shareholders of AirTran will receive more shares so that the value they receive remains \$3.50. This is a very risky transaction to enter for a buyer, and probably one of the reasons for its rarity. If Southwest Airlines’ share price were to suffer a sudden sharp drop, it will have to issue more shares in the merger. The additional issuance dilutes existing shareholders and leads to a drop in the share price with the issuance of even more shares. It risks triggering a downward death spiral in the share price. In order to minimize the risk of unanticipated dilution, the merger agreement allows Southwest Airlines to deliver additional cash in lieu of stock. As discussed

earlier, arbitrage activity always exerts some selling pressure on an acquirer's stock, so that the possibility of this effect should not be ignored. Only buyers who acquire target companies that are small relative to their own size should use fixed-share collars, because the dilution would remain insignificant even for a sharp drop in share prices, and no death spiral would be triggered. If Southwest Airlines accepted a fixed-share collar, it must have been very confident that its share price would remain strong.

The number of shares to be issued as long as Southwest Airlines' share price is in the collar is fixed at a ratio of 0.321 of Southwest shares for each share of Airtran owner. For prices above the upper and below the lower bounds of the collar, it is the dollar value of the consideration that is fixed rather than the number of shares, so that the exchange ratio varies.

This transaction can be hedged only through a delta-neutral hedging strategy.

Figure 2.8 shows the implied options in a fixed-rate collar. The combination of a long call with a low strike price and a short call with a higher strike price yields such a payoff diagram. This combination is also known as call spread or bull spread. An arbitrageur who wants to hedge a fixed-rate collar needs to calculate the delta for each option, sum the deltas, and then short the net delta in the form of shares of the target firm.

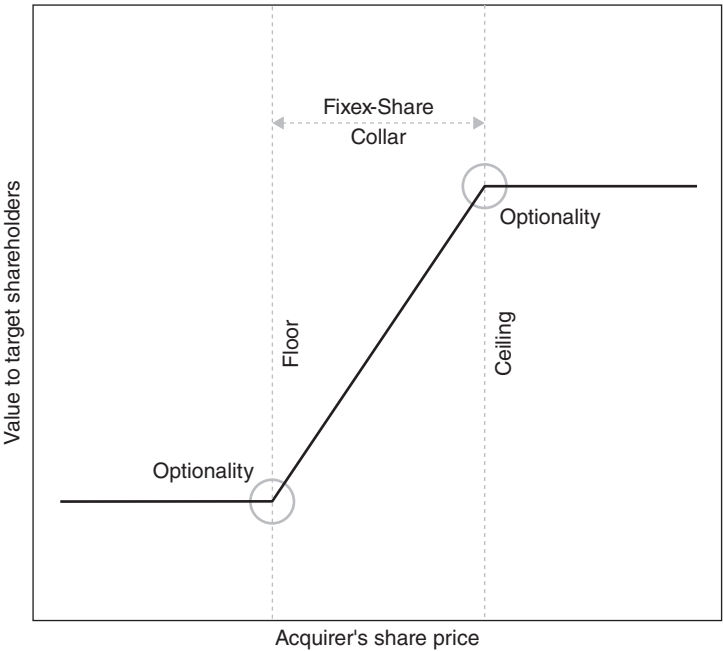


FIGURE 2.8 Optionality in Mergers with a Fixed-Share Collar

The Role of Merger Arbitrage in a Diversified Portfolio

Portfolio theory reduces investments to two dimensions: risk and return. Both variables are forward looking and hence difficult to assess without perfect foresight. Therefore, analysis relies on historical relationships that are extrapolated to the future. It is assumed, or rather hoped, that the historical relationships will also hold in the future. This may or may not be the case.

Risk is a variable that is particularly difficult to define. The most common substitute for risk is price volatility. An asset's historical price fluctuations are observed, and it is assumed that these historical fluctuations incorporate all the risks that stockholders faced in the past. This historical volatility is then used in forward-looking analysis, and it is assumed that any risks that this stock faces have already occurred in the past and hence are incorporated in the historical volatility. The length of time over which historical volatility is calculated is the most important determinant of whether there is any validity to this approach. It clearly makes no sense to produce 10-year forecasts based on historical volatilities observed over only one or two years.

More fundamentally, it is a strong assumption that all risks inherent in a stock have already manifested themselves in the past. The economy evolves constantly and markets are in flux; assuming that future fluctuations will somehow resemble those of the past is not obvious. However, it is the only practical approach that can be taken when forecasts are made.

An improvement over a static forecast can be achieved through the use of GARCH models. In these models, volatility is autocorrelated. These models are better at replicating some of basic observations about volatility, notably that volatility occurs in clusters and is mean reverting. Volatility clusters are periods in which markets are highly volatile for longer periods of time or exhibit low volatility for long periods of time.¹ In the words of B. Mandelbrot, "Large changes tend to be followed by large changes, of either sign, and small changes tend to be followed by small changes."²

In the long run, however, volatility tends to revert to a mean value.

Other than volatility, another statistical term that plays an important role in the construction of portfolios is correlation. It is just as important as return and risk. Even though the risk/return trade-off has become a household term, correlation somehow has been left out. The popular business press does not refer to risk/return/correlation trade-offs.

Correlation describes the comovement of two different assets and can range from -1 to $+1$. A perfect correlation of $+1$ means that prices of the assets move exactly in parallel, whereas -1 means that they move exactly in the opposite direction. When building financial portfolios, it is best to have assets that have no correlation at all.

VOLATILITY OF STOCKS GOING THROUGH A MERGER

Once a merger is announced, the volatility of a stock declines markedly. Figure 3.1 shows the stock prices of Autonomy Corporation before and after the announcement of its cash merger. It can be seen that price fluctuations following the announcement of the merger are much smaller than before. Figure 3.1 shows daily price changes of Autonomy Corporation, a U.K.-based infrastructure software firm, that was acquired by Hewlett-Packard Co in 2011. This merger was discussed in more detail in Chapter 2. It is clear from the picture that daily price variations are much smaller following the announcement of the merger on August 11, 2011, than prior to that date.

Daily total returns differ from daily stock price returns in that they incorporate dividends. For dividend paying stocks, price return will be negative on the ex-date of a dividend, even though the investor receives a separate cash flow from the dividend payment. Therefore, total returns are the appropriate measure that will be used for the remainder of this book.

To demonstrate that this is not just an effect in isolated cases, pre- and post-announcement volatilities of 258 mergers were analyzed. The data set consists of 258 cash mergers for the period of March 31, 2010, until March 31, 2014, retrieved from the Bloomberg database. Total returns for these stocks were retrieved also from Bloomberg. The calculation for premerger volatilities and returns starts 60 trading days before the announcement, and post-merger returns and volatilities are calculated from the day following the announcement for 60 days or until completion, whichever came first. The histogram in Figure 3.2 shows the resulting cross-sectional distribution of returns. The height of the bars in these histograms shows the number of stocks whose returns fell within a given range. The distribution of dark bars is that of pre-announcement returns, that of light bars of the returns post-announcement.

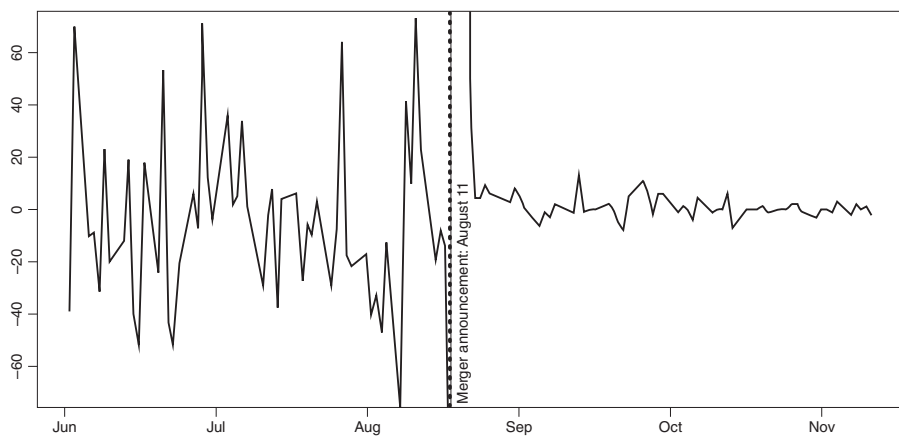


FIGURE 3.1 Daily Price Changes (in pence) of Autonomy Corporation before and after the Merger Announcement

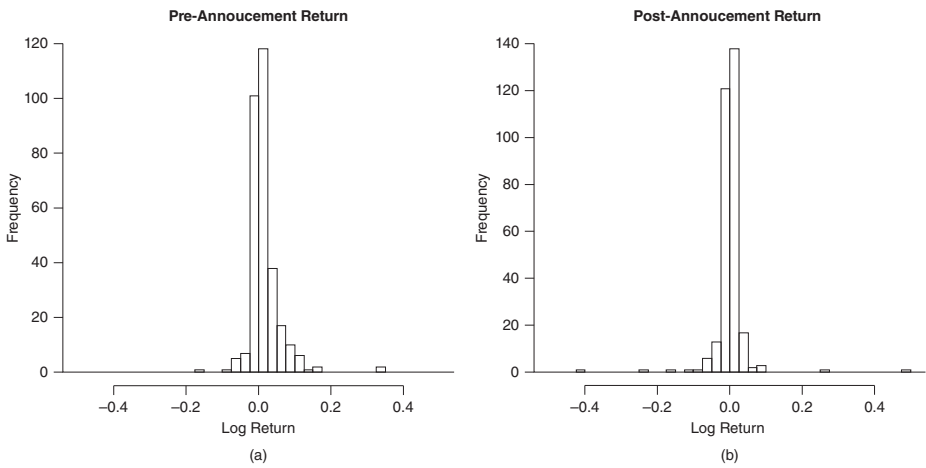


FIGURE 3.2 Cross-sectional Distribution of Daily Returns (a) before and (b) after the Announcement of a Merger

It can be seen that the distribution of returns is spread out before the announcement but collapses to a much narrower shape once a merger has been announced. Pre-announcement stock returns span a wide range, whereas post-announcement stock returns fall into a very narrow range. A similar phenomenon can be observed for volatilities. This means that daily fluctuations in the prices of stocks going through a merger are much lower once a merger has been announced than the fluctuations of stocks that are not subject to a merger. This effect is even more visible when the variance of returns is plotted, as in Figure 3.3. All volatilities and returns are annualized for comparability.³

There are several implications of these observations.

Evaluating stocks going through a merger on the basis of their historical volatility and return characteristics will lead to incorrect conclusions. Many asset managers use value-at-risk (VAR) methodologies in their risk assessments. These methodologies will yield incorrect results for stocks going through a merger. After the announcement of a merger, a VAR system will look back at the recent much higher volatility and extrapolate this into the immediate future. However, actual price fluctuations are much smaller for merger stocks than before the announcement, so that the VAR is overestimated. As the merger seasons, a more dangerous error enters into VAR: The algorithm will look back at recent volatility and project a low volatility into the near future. As Table 5.2 will show, the average time until a merger collapses is about 128 days, or more than four months. Therefore, a VAR methodology will underestimate the price risk of a merger stock. This is even more so if the VAR algorithm is based on the RiskMetrics methodology, which uses exponentially declining moving averages. The VAR will decline soon after the merger announcement and will remain low even as the deal approaches the time of the average deal collapse.

Another implication is that combining stocks that are going through a merger into a portfolio should produce an overall volatility that is significantly lower compared to that of a portfolio of nonmerger stocks for which no merger has been announced. A portfolio of stocks going through a merger is no longer a portfolio of stocks but a portfolio of merger spreads. The characteristics of that portfolio are hence those of merger spreads. Although the analysis for Figure 3.2(a) and (b) was based on cash mergers, the same qualitative observation is also true for stock-for-stock mergers or mixed stock/cash mergers. The difference between these two types of mergers is primarily the degree to which any residual market volatility is contained in the spread.

It was shown in Chapter 2 that spreads in stock-for-stock mergers exhibit negative correlation to the market, all else being equal; refer to

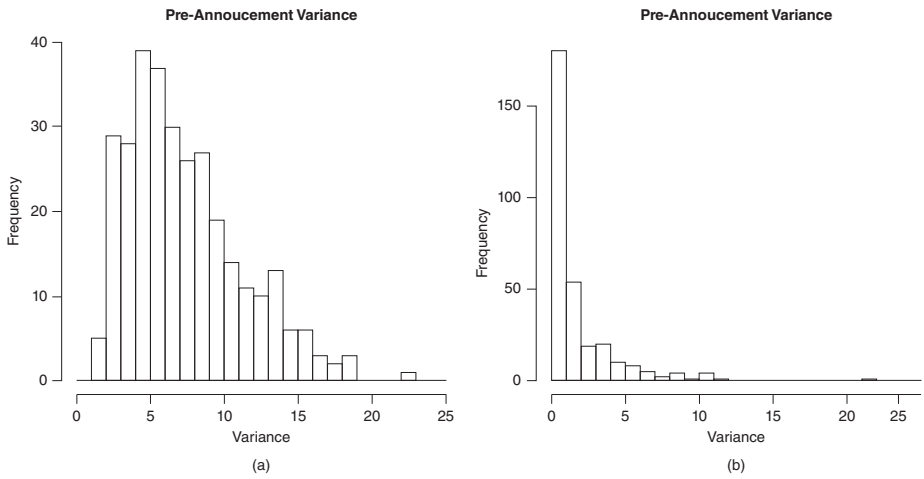


FIGURE 3.3 Variance of Daily Returns (a) before and (b) after the Announcement of a Merger

Table 2.2 in particular. Cash mergers should exhibit a positive, albeit small, correlation with the overall market. By combining cash and stock-for-stock mergers in a portfolio, arbitrageurs can create a net correlation that is almost zero. Unfortunately, all this theoretical elimination of all correlation is not achievable in practice, and most merger funds do have a small positive correlation with the overall stock market. However, the beta coefficient of merger arbitrage funds tends to be small and is of the magnitude of 0.5 to 0.6 for many funds.

MERGER ARBITRAGE UNIVERSE

Corporate merger activity is sensitive to the macroeconomic environment, in particular the risk-taking environment and financial and liquidity conditions. One would expect that the size of the opportunity set will influence the returns that arbitrageurs can generate. In an environment with plenty of mergers, spreads should be wider as the capital available for merger arbitrage is spread of a larger number of opportunities. In a scenario where there is little merger activity, the same capital is spread over fewer mergers, and as a result merger spreads and returns achieved by arbitrageurs should be smaller.

Mergers and acquisitions appeared not long after the formation of the modern corporation. For example, the ill-fated East India Company is known to have merged with one of its competitors in the year 1708. Since the late nineteenth century, mergers and acquisitions have occurred in waves. Economic historians are still debating the reasons for this clustering. Reliable data about M&A activity are only available from the beginning of the 1990s, but the existence of prior M&A waves is well documented and supported by their side effects, most notably, bouts of legislative activity to tame what in each era was perceived as an excess.

For example, U.S. antitrust legislation arose out of a wave of mergers and acquisitions in the late nineteenth and early twentieth centuries that led to the formation of trusts. Similar business empires were built around the same time in Europe, too, where many of the creations of the period survive as major enterprises to this day. In the United States, antitrust legislation of the Sherman Act of 1890 and the Clayton Act of 1914 survives today and is evidence of successful M&A integration efforts.

The first wave lasted from the year 1893 to 1904 and consisted of horizontal integration for the formation of trusts. It ended with a Supreme Court decision of 1904 that made the Sherman Act applicable to mergers. It should be noted that the United Kingdom experienced a similar wave of merger activity at roughly the same time, the turn of the century.

The second wave in the years 1919 to 1929 was a continuation of the first wave and concentrated in particular on the automobile industry. It ended with the crash of 1929.

The third wave in the years 1955 to 1973 accompanied the conglomerate boom. It was hoped that the diversification across different business lines would increase the overall value of the conglomerate. It ended when it became apparent that this premise could not be realized, and conglomerate stocks crashed in the years 1969 and 1970. The legacy of this period is the basis of modern M&A legislation and jurisprudence. The U.K. Takeover Code and, by extension, many of its European and Asian copycat legislations as well as some key Delaware court decisions, have their origin in this period.

The fourth period lasted from 1984 through 1989, with the emergence of the corporate raider, junk bond financing, leveraged buyouts, and the establishment of hostile takeovers. Legislation and interpretation of the law took on a new level of complexity in light of these developments.

The fifth period lasted from the year 1993 to 2000 with a series of mega-mergers, including some unprecedented cross-border mergers of large iconic companies like Mannesmann / Vodafone or Chrysler / Daimler Benz. It ended with the stock market crash of the year 2000.

A sixth period lasted from the year 2003 through 2007 and was characterized by leveraged acquisitions through private equity partnerships. While the leveraged acquisition originally had been designed for hostile transactions, private equity buyers almost always take a friendly approach to acquisitions.

The seventh period began in the year 2010 and persists at the time of this writing (2015).

The evolution of merger and acquisition activity since the year 1895 can be seen in Figure 3.4. The seven waves of merger activity can be identified readily. Note that no single data source covers the entire period until today.

Today it is not known whether arbitrageurs were active prior to the third wave. As discussed in Chapter 1, the earliest documented merger arbitrage trades from the 1960s fall into the third wave, and it can be assumed that by that time the strategy was well established.

Data on the dollar volume of mergers shows its high dependence on the level of the stock market. Figure 3.5 shows the volume of merger activity in dollar terms, as opposed to the number of mergers as in Figure 3.4. Comparing the two figures, it can be seen that peaks in the merger waves correspond to peaks in the stock market, and so do troughs. However, as high stock prices also increase the value of mergers, the merger waves are magnified when looked at through deal values as opposed to through the number of transactions.

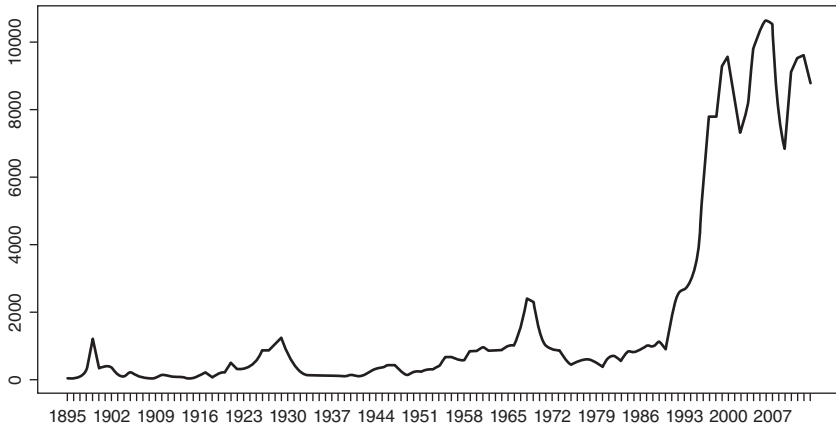


FIGURE 3.4 Number of Mergers and Waves of Merger Activity since the year 1895⁴

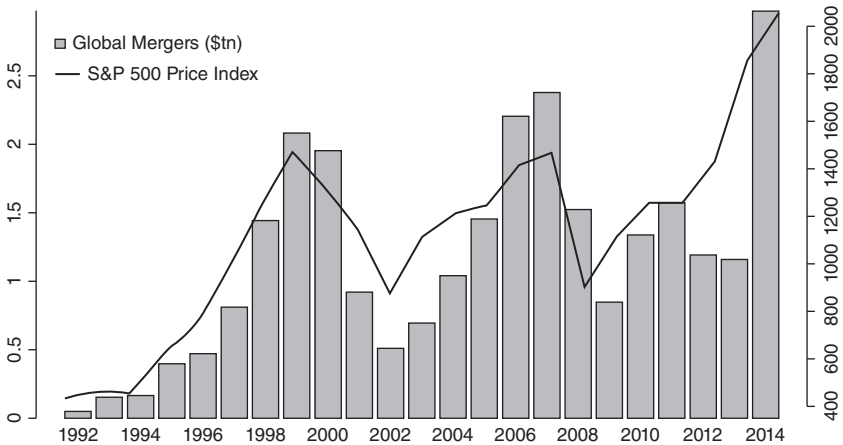


FIGURE 3.5 Worldwide Volume of Mergers (in US\$ trillions, left axis) and Level of the S&P 500 Price Index Since 1992 (right axis) Data: Factset Mergerstat

The composition of types of mergers available to arbitrageurs also varies over time, as illustrated by Figure 3.6. It can be seen that cash mergers represent the majority of all mergers, by equity value, announced over the period. Around the year 2000, during the Internet bubble when valuations were uncharacteristically high, stock was the preferred currency

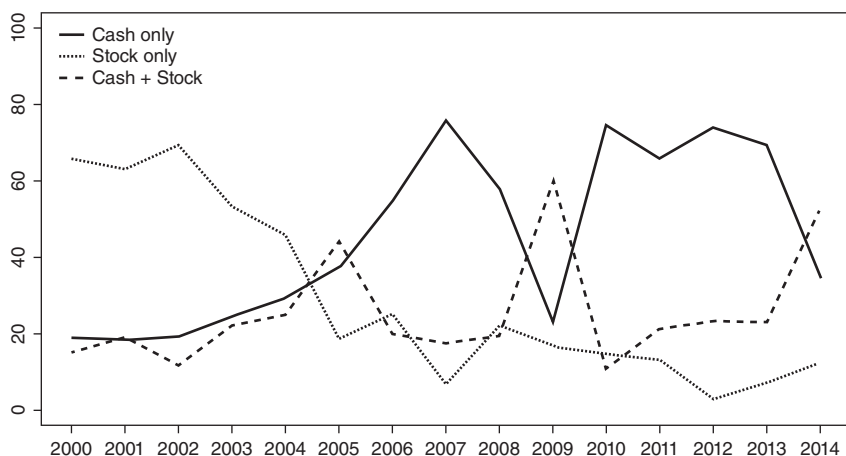


FIGURE 3.6 Percentage Cash and Stock Mergers over Time Data: Factset Mergerstat

for acquisitions. Since the year 2005, cash and mixed cash and stock mergers have dominated the universe while stock-only mergers consistently represent less than one fifth of all transactions. The availability of stock-for-stock mergers will determine what fraction of an arbitrageur's portfolio will have a short component associated with it. As I discuss elsewhere, some investors misunderstand arbitrage portfolios because they look at them from the mindset of a market-neutral investor. In this view, arbitrage portfolios have substantial market exposure because they contain not enough short positions to offset the longs. Of course, this view completely mischaracterizes the risk/return profile of merger arbitrage portfolios. I have been criticized myself at times for not having shorted at a time when the best investment opportunities presented themselves in cash mergers and stock-for-stock mergers were relatively unappealing. Whenever the opportunity set that presents itself to arbitrageurs has few stock-for-stock mergers, one would expect the arbitrage portfolio to be more "long" than at times when stock is used at acquisition currency widely.

It should be noted that the composition of the non-U.S. merger universe resembles that shown in Figure 3.6. The main difference lies in the period around the year 2000, where stock-for-stock mergers represented a much smaller percentage of mergers. Most likely this is due to the Internet bubble having taken on nowhere near the magnitude internationally that it did in the United States, and hence, the use of stock as an acquisition currency was not as widespread internationally.

MERGER ARBITRAGE SPREADS

When arbitrageurs talk about the spread on a deal, they refer to the expected or anticipated annualized spread. Because the closing date is not known with certainty and needs to be estimated, the resulting annualized number is also merely an estimate. In contrast, once a merger has closed, or failed, the completion date is known and can be used to calculate the spread that was realized. In the rare cases where the estimate matches the realized closing date the two spreads will be equal. A more detailed and technical discussion of the analytical problems that arise from this distinction is shown in Exhibit 3.1.

EXHIBIT 3.1 CALCULATION OF SPREADS FOR HISTORICAL TIME SERIES

Readers familiar with levels of spreads over the period covered in Figure 3.7 will notice that this diagram implies much higher spreads than they may recollect. The reason lies in the computation of the spread in a backward-looking analysis. Arbitrageurs calculate spreads on the basis of an anticipated closing date. However, the anticipated closing date at any given time is difficult to establish objectively ex-post. It would be possible to guess what one might have estimated at the time; however, such a guess is subject to bias since the outcome is known. Therefore, in the calculation of the spread for Figure 3.7 the actual closing date was used, which was, of course, unknown at any given day. This leads to a misestimation of many spreads. For example, a company may have a 6 percent absolute spread with an anticipated closing date that lies six months in the future. This may be an appropriate spread for an arbitrageur. However, if the actual closing date occurs much earlier than anticipated, then the calculated spread of this merger throughout its life will be substantially higher. That happens frequently enough to produce large outliers.

When writing this book, I contemplated for a long time whether or not to include this chart. Its inclusion obviously opens the door to criticism by readers who either do not read this explanation or deliberately choose to ignore it. Nevertheless, I believe that this chart does provide valuable insight.

In light of this important limitation, readers should focus on the evolution and relative behavior of spreads over time rather than their precise level.

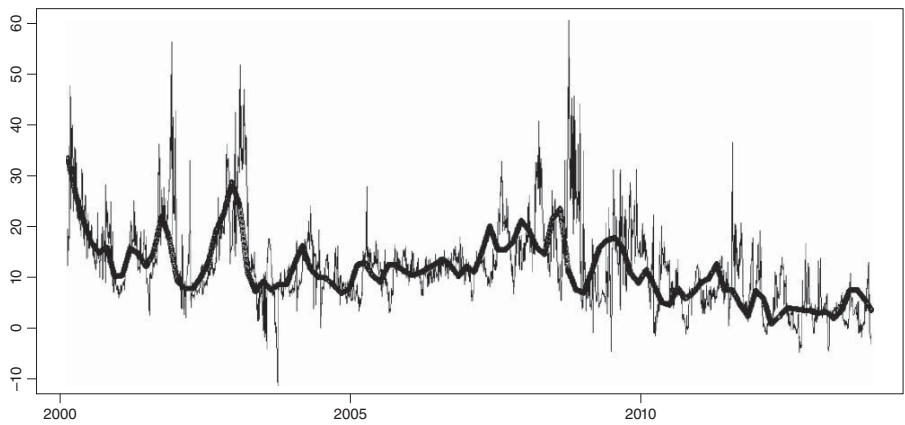


FIGURE 3.7 Average Annualized Merger Arbitrage Spread

The evolution of realized arbitrage spreads since the year 2000 is shown in Figure 3.7, and their distribution in the middle of each calendar year in Figure 3.8. Figure 3.7 shows the average spread that would have been realized had an investor put all capital in all cash mergers above \$1 billion on that day. Figure 3.8 gives an overview of the distribution of spreads in the middle of each calendar year shown, again under the assumption that all capital had been invested at that date in each deal with an equity value of at least \$1 billion.⁵ Readers should review the note about calculating spreads for historical time series before proceeding. Readers with experience in merger arbitrage spreads may doubt these numbers based on their experience unless they understand the methodology underlying their calculation.

It can be seen that average spreads of merger arbitrage have fluctuated widely since the year 2000 but overall have been undergoing a downtrend. This compression of merger arbitrage spreads is reflected in returns generated by merger arbitrage hedge funds over time (see Figure 3.13).

In addition to the overall downtrend the dispersion of spreads at any given point of time is substantial. This is illustrated by the violin chart of mid-year spreads. The middle of the year is chosen for no particular reason other than it avoids potential year-end effects that might arise had 12/31 been selected as the date of reference. While a clear median can be identified, some outliers exist from mergers completing earlier than anticipated by market participants as well as from deal collapses, which leads to significant negative returns. Speaking of a typical merger arbitrage spread at any given time is not very meaningful. It is better to refer to ranges for different categories. For example, safe mergers are, at the time of writing, priced for annualized returns of 2 to 5 percent, whereas mergers with antitrust risk have annualized spreads of 8 to 10 percent. Mergers with political risk have annualized returns above 15 percent. Expressing spreads in this way accounts better for the underlying variability between spreads of different risk characteristics.

Observers blame various factors for the secular decline of the merger arbitrage spread.⁶ The most obvious ones are capacity constraints and transaction costs. As will be discussed in Chapter 5, transaction costs have declined sharply since the year 2000 as advances in communication technologies have reduced the cost of executing trades, and the replacement of market makers by high-frequency traders has reduced bid/offer spreads. This means that, all else equal, arbitrageurs can generate the same level of returns with tighter spreads. Capacity constraints refer to the number of arbitrageurs and the capital that they deploy in this strategy relative to the opportunities presented to them. Statistical evidence suggests that heightened arbitrage activity, measured through increase in trading volume following the announcement of a merger, coincides with the decline in

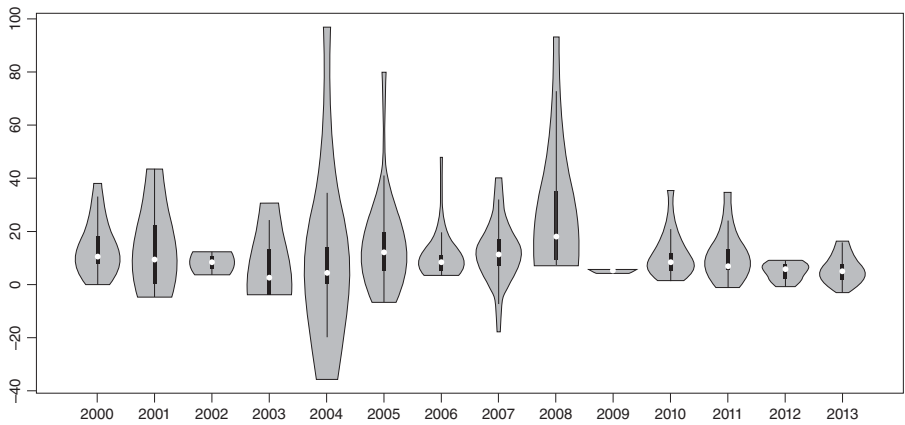


FIGURE 3.8 Distribution of Merger Arbitrage Spreads (Annualized) in the Middle of Each Year

spreads. This suggests that more and more arbitrageurs chase the same deals, thereby depressing profit opportunities. The sharp increase in capital invested in merger arbitrage is shown in Figure 3.12.

Another important factor is a reduction of risk in merger arbitrage over time. The severity of price declines for targets of failed mergers has lessened over time. This can be seen from Figure 4.11 which shows a modest decline in acquisition premia between the years 1995 and 2009. Since 2009, however, acquisition premia have been rising slightly, yet merger arbitrage spreads have continued their downtrend. Therefore, a reduction in risk may not be the primary driver of the secular decline in merger arbitrage spreads.

A more likely driver for the declining performance of merger arbitrage as a strategy is the fall of interest rates in the quarter century after 1990. Merger arbitrage resembles an investment in a short-dated zero coupon bond: The investor will obtain a slight premium to the invested capital with a high probability, but there exists a small probability of a very large loss of principal. With an average time to close of 128 days, merger arbitrage spreads should therefore behave similarly to short-term interest rates. When interest rates are at 10 percent, merger arbitrage should yield a premium above that rate. Similarly, when interest rates are near zero, as at the time of this writing, merger arbitrage should generate a return that is not much higher than zero.

Interest rates are made up of two components: a risk-free rate and a spread. While the risk-free interest rate is generally considered an indicator of the level of interest rates, the spread is assumed to be an indication of market participants' willingness to assume risks. The tighter the spread, the higher the willingness to assume risk. While these two numbers might be good indicators in an overall macroeconomic sense, the actual interest rate paid by market participants, and the discount rate used in investment decisions, are neither the risk-free rate nor a spread but the actual interest rate available to market participants.

The data confirm the validity of this argument. Correlation between the median merger arbitrage spread and various interest rates are shown in Table 3.1. The correlations are shown for both daily and monthly data. As is often the case, monthly data smooth short-term volatility and hence, give a more stable relationship. However, as most investors look at data daily, it can be misleading if monthly data series are used to draw conclusions about the merits or demerits of an investment strategy.

While the correlation coefficients shown may not appear to be very large by themselves, it should be remembered for context that rolling correlations between the S&P 500 and U.S. Treasury futures (as a substitute for bonds) have historically fluctuated in the range of -0.5 to $+0.5$. Therefore, the correlation between merger arbitrage spreads and high-yield interest rates is comparable to the correlation between equities and bonds in a time of

TABLE 3.1 Correlation of Merger Arbitrage Spreads to Different Interest Rates

Interest Rate	Monthly Data	Daily Data
Barclays US Corporate High Yield (YTW)	0.53	0.47
Barclays VLI High Yield (YTW)	0.52	0.44
KDP High Yield Daily Yield	0.57	0.53
KDP High Yield Daily Mid Grade Yield	0.59	0.53
10-year Treasury	0.39	0.34

Source: Mergerstat, Bloomberg, Author's calculations.

extreme crisis or exuberance when bonds and stock appear to move in synch. By most investors' standards, such a correlation is meaningful.

While academic researchers have ignored the impact of interest rates on the merger arbitrage spread this relationship is well known to practitioners. A study by OFI Asset Management⁷ builds a model of 1,911 merger announcements between the years 1988 and 2010 that incorporates the investment-grade credit spread into the analysis. A change in the credit spread of 10 bps leads to an increase in merger arbitrage spreads by 100 bp, underlining the importance of interest rates.

Another variable that one would expect intuitively to contribute to the level of merger arbitrage spreads is the available universe of mergers that arbitrageurs can invest in. If the median spread is correlated to the outstanding equity value of announced mergers, the correlation coefficient is a mere 0.11 for daily data and 0.15 for monthly spread data. It is also clear that despite record merger activity in recent years, spreads are lower than ever so that merger activity clearly can be no more than a secondary driver of arbitrage spread levels.

The conclusion of this analysis is that interest rates are by far the primary determinant of merger arbitrage spreads.

PERFORMANCE CHARACTERISTICS OF MERGER ARBITRAGE

Securities dealers have practiced merger arbitrage for a long time. Investments have become available to investors since the 1980s, when private partnerships and mutual funds began to be rolled out more widely. With the growth of hedge funds in the 1990s, various data vendors began to track the performance of merger arbitrage hedge funds, and with the growth in interest in the strategy, academic literature began to investigate the potential of merger arbitrage.

Researchers approach merger arbitrage from two different angles. The first approach is to examine the returns of hedge funds that specialize in merger arbitrage. The second approach is more granular. It seeks to replicate mechanically the actions of an arbitrageur by investing in each announced deal and constructing the evolution over time of a hypothetical portfolio of stocks going through a merger. A number of rules for purchase and sale of investments is assumed, and the return of this portfolio is then measured over time. The second approach mimics an arbitrageur's activities in the construction of a portfolio rather than analyzing descriptive fund data, as the first approach does.

Each approach has its strengths and weaknesses. Using merger arbitrage hedge fund returns is comparing apples and oranges because funds can have different fee and cost structures. Although most hedge funds have a 2 percent management fee and 20 percent performance fee, some funds deviate from this 2/20 fee structure, in particular following the financial crisis of the year 2008. In addition, hedge fund databases are known to suffer from inaccuracies, most notably an incomplete sample of the universe of merger arbitrage funds, and survivorship bias.

The construction of a hypothetical arbitrage portfolio in the second approach is also problematic. It assumes that arbitrageurs follow an index-like investment strategy, whereas actual arbitrageurs select their targets carefully. It also does not incorporate inefficiencies that can make some mergers less investable than others—for example, when an acquirer's stock cannot be borrowed to engage in a short sale. Finally, placing orders carefully around the bid/offer spread is an important ingredient in any arbitrage strategy that deals with tight arbitrage spreads. It is difficult to capture bid/offer spreads accurately.

The Perils of Analyzing Stock-for-Stock Mergers

A complication in the analysis of any long/short strategy is the difficulty to estimate the cost of borrow. When shares are shorted, these shares must be borrowed. Most shares trade as *general collateral* without an incremental cost of borrow. However, for acquirers in mergers, it is not unusual to see the cost of borrow spike. This cost will be reflected in the arbitrage spread. As a result, the arbitrage spread will appear more profitable than it really is, because the gains that the arbitrageur makes will be paid out in fees to the lender of the security that has been shorted.

Studies about merger arbitrage have consistently ignored this problem. This cavalier attitude is understandable, considering that there is no reliable source for securities lending rates. Even market participants are often in the dark. It is well known among practitioners that prime brokers quote vastly divergent prices from client to client, probably based on the volume of

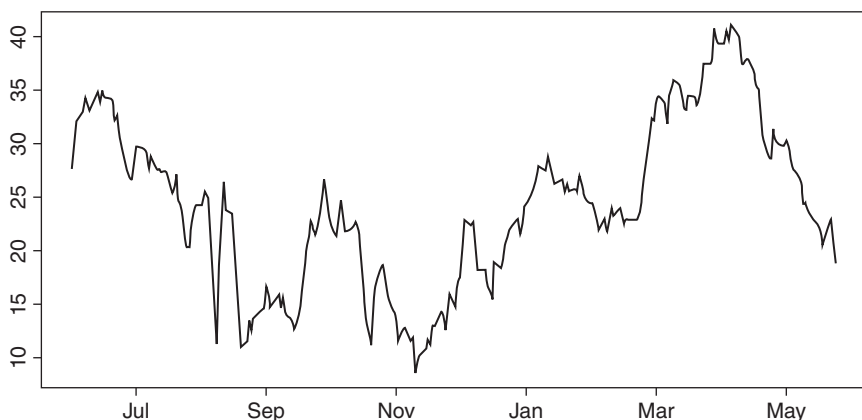


FIGURE 3.9 Percentage Spread of the Kinder Morgan / El Paso Merger

activity of a client as well as the client's ability to get competitive quotes from other providers. Nevertheless, just because the data are difficult to obtain does not justify ignoring this effect.

An illustrative example of how misleading a spread can be is the \$6.2 billion acquisition of El Paso by Kinder Morgan in 2012. The spread, shown in Figure 3.9, was at an alarmingly high level from the announcement through closing. Some investors at the time queried me why the market factored in such a high risk on this merger. The answer was not that the market considered this transaction risky, but that the cost of borrow was exceptionally high due to limited supply of shares. Consider one prime broker's securities lending desk's market color on February 29, 2012:

Kinder Morgan (KMI) - Rose 1% yesterday. Stock available in lending programs approaching 90% utilization. Only small lots of new stock being shown by lenders @ -95%. Mounting recalls coupled with limited supply continuing to squeeze borrow availability and rates to -45%. The desk is not approving new shorts at this time. Pls call for updates.

With no shares available to be lent out, there will be no arbitrage activity and the spread can trade at random levels.

Considering the large market capitalization of \$21 billion of this merger, if one were to construct a capitalization-weighted theoretical arbitrage portfolio, then this merger would be by far the largest single constituent of such a portfolio. As a result, the theoretical profitability of merger arbitrage would be vastly overstated.

In order to avoid problems with misleading spreads due to incomplete data on the cost of borrow, I have made all original analysis in the book that incorporates spreads for cash-only deals. Although this approach neglects a substantial fraction of merger arbitrage opportunities, it does provide much more precise insights than a more comprehensive analysis for which it is clear that a good fraction of relevant data, spread and cost of borrow, are unreliable and missing. As the old saying goes: junk in, junk out.

As an aside, some market participants trade on the anticipation of an increase in the cost of borrow of shares. This used to be a business that was carried out by investment banks. However, due to recent cuts in compensation, their securities lending departments fulfill now largely clerical functions. Trading and anticipation of increasing borrow costs has become an area that some very specialized broker/dealers and hedge funds implement. Experience tells these traders for which acquirers an increase in borrowing activity can also lead to an increase in borrow cost. They will then borrow shares at a prevailing market rate and lock in the borrow cost for an extended period of time, usually three months. If the borrow cost then rises, arbitrageurs will have to borrow the shares at a higher rate. The higher rate, in return, forces the arbitrage spread to widen. As already discussed, this widening does not benefit merger arbitrageurs, as the increase is fully attributable to the higher cost of borrowing shares.

Of the two research approaches to merger arbitrage the second approach—that of analyzing merger arbitrage spreads—has been practiced for a longer time than the analysis of merger arbitrage fund data. This is probably caused by the paucity of data on funds for years prior to 1990, because most merger arbitrage occurred in the broker/dealer community and merger arbitrage vehicles open to outside investors are a more recent development. However, now that a quarter century of merger arbitrage fund performance data are available, this approach is viable.

Using the first approach, an early study⁸ of merger arbitrage investigated 761 cash tender offers that were announced from 1971 to 1985. It concluded that a merger arbitrageur earns a daily abnormal return of 0.47 percent. On an annualized basis, this corresponds to an abnormal return of 171 percent, a return that any merger arbitrageur is dreaming of. The flaw in this study that led to this outsized return is the way in which the return was calculated: For each merger, the return was annualized. These returns were then averaged across all mergers in the sample. The implicit assumption of this cross-sectional approach is that all mergers happen at the same time. In reality, the mergers were spread out over a 14-year period, with only limited overlap, and the average daily return could not have been achieved on a time-weighted basis. A study by Jindra and Walkling⁹ suffers from the same error. It examines 361 cash tender offers between 1981 and 1995 and finds

annual excess returns of up to 115 percent for purchases of target stock on the day after the announcement and a sale one week later.

Bhagat et al.'s¹⁰ analysis of cash tender offers describes the nonlinear nature of merger arbitrage. The capital asset pricing model (CAPM) used in it is inadequate because it does not capture all risks, most notably the deal-specific risk of noncompletion.

Mitchell and Pulvino¹¹ find excess returns of almost 4 percent per year using a contingent claims analysis. Their study remains one of the most thorough and detailed studies of merger arbitrage performed to date, and it deserves to be discussed at greater length. They examine 4,750 cash and stock mergers and tender offers between 1963 and 1998. Rather than examining merger arbitrage transactions at a deal level and then averaging over transactions, they create a hypothetical portfolio that is managed on a daily basis. This creates what is effectively a passively managed risk arbitrage index, which is subject to a number of rules that are adhered to mechanically. For example, no single position can amount to more than 10 percent of the portfolio. An important finding of their study is the correlation characteristics of merger arbitrage. Under most market conditions, merger arbitrage is uncorrelated with the returns of the overall stock market. However, in severely declining markets, the correlation becomes positive. Mitchell and Pulvino estimate a piecewise linear regression of a CAPM model that separates returns in upmarket and downmarket series:

$$R_{\text{RiskArb}} - R_f = (1 - \delta)[\alpha_{\text{Mkt Low}} + \beta_{\text{Mkt Low}} (R_{\text{Mkt}} - R_f)] + \delta[\alpha_{\text{Mkt High}} + \beta_{\text{Mkt High}} (R_{\text{Mkt}} - R_f)] \quad (3.1)$$

where

R_{MKT} is the market return.

R_f is the risk-free rate of return.

δ is a dummy variable that is 1 when the market return is above a threshold level (upmarket) and 0 when the market return is below that threshold (downmarket).

α_{MktLow} , α_{MktHigh} , β_{MktLow} , and β_{MktHigh} are the alpha and beta coefficients of a CAPM model for up- and downmarkets.

The advantage of running a piecewise linear regression of this type over a normal CAPM model is that the piecewise model takes nonlinear return characteristics into account, albeit limited to those returns that have been observed historically. The model is estimated through trial and error so that

the threshold level that is found is the one that yields the highest R^2 for the model.

The most important conclusion of this study is that linear mean-variance analysis is inappropriate for evaluating merger arbitrage returns. The authors find a monthly excess return (alpha) of 0.53 percent over the risk-free rate with zero beta in upward-trending markets, but a beta of 0.49 percent in downward-trending markets. The threshold level was a monthly return of -4 percent, which minimizes the residuals of the model. Therefore, all markets with performance worse than -4 percent are considered *downmarkets*, and those with performance better than -4 percent are *upmarkets*. This result is depicted graphically in Figure 3.10. It can be seen that the slope of the graph has a kink at the -4 percent (monthly) threshold level. The three panels in Figure 3.10 show different periods of time, and the effect can be seen clearly for all three periods. For downmarkets with a worse performance, the beta of the merger arbitrage portfolio increases. This effect is more pronounced for cash transactions than stock-for-stock mergers. For stock-for-stock transactions, the beta remains a modest 0.12 in downmarkets, whereas it increases to 0.72 for cash transactions. Even though this is a large discrepancy, it should be stressed that 0.72 is still a low beta coefficient when compared to other asset classes. It should be noted that the authors also estimate a standard CAPM model that does not incorporate a kink but is one single straight line. This model generates an alpha of 0.29 percent and beta of 0.12 percent. To what extent the finding in the bear market is relevant is another question: There are only few occurrences of monthly returns of less than -4 percent, whereas the bulk of the months has a return better than -4 percent.

Mitchell and Pulvino take an additional step in their analysis. Rather than just describing the nonlinear nature of merger arbitrage, they use Black-Scholes analysis to value the optionality. Whenever an investment strategy has nonlinear returns, an option is embedded and hence option theory should be used in its evaluation. Black-Scholes is a good enough approximation for the purposes of this academic study. The authors build a portfolio of written index put options and Treasury bills. The put options are written at a strike price 4 percent below the market at a given time. They find that merger arbitrage generates excess returns of 0.33 percent per month even when options analysis is used based on theoretical Black-Scholes option prices. When actual put option prices are used, the excess return is still a healthy 0.29 percent. Therefore, even if merger arbitrage has characteristics that resemble those of a strategy of writing put options, it still outperforms that strategy.

Mitchell and Pulvino do not limit their analysis of merger arbitrage to a hypothetical portfolio but also apply their analysis to returns of actual

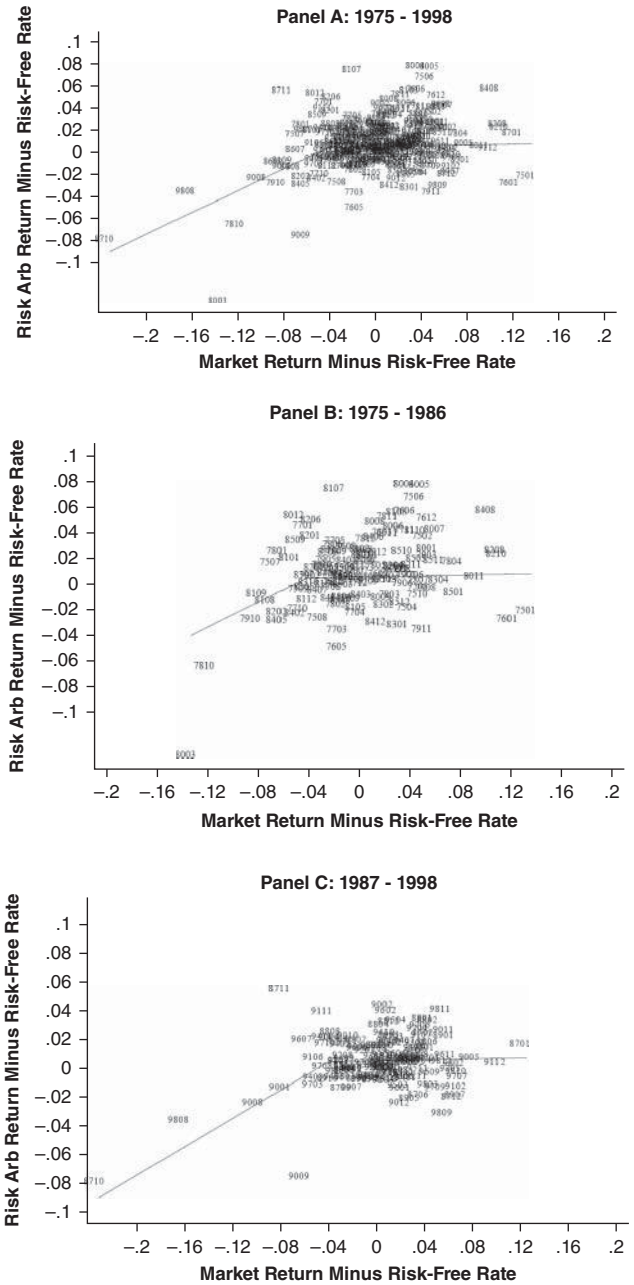


FIGURE 3.10 Piecewise Linear Regression of Excess Merger Arbitrage Returns versus Market Returns
Source: Mark Mitchell and Todd Pulvino, “Characteristics of Risk and Return in Risk Arbitrage,” *Journal of Finance* 56, no. 6 (December 2001).

merger arbitrage hedge funds. Hedge funds from HFR's database over the period from 1990 to 1998 exhibit the same nonlinear characteristic as the artificial index created in the first part of the study: In upmarkets, the merger arbitrage hedge fund beta is a low 0.10, which rises to 0.60 in downmarkets.

Another conclusion reached by Mitchell and Pulvino is the importance of transaction costs. They find that much of the excessive outperformance of merger arbitrage found by other studies can be explained by the neglect of transaction costs.

Eliezer Fich and Irina Stefanescu¹² take a different approach: They construct an equally weighted portfolio of 1,928 cash and stock mergers that occurred between 1985 and 2000 where the bidder is a Standard & Poor's (S&P) 500 firm. They find that such a portfolio yields a monthly excess return of 1.2 percent, which is 85 percent higher than that of a portfolio of non-S&P 500 bidders. Despite the higher return, the likelihood of deal completion is higher when a bidder is in the S&P 500 than when not. These results hold for cash and stock-for-stock transactions.

Malcolm Baker and Serkan Savasoglu¹³ examine 1,901 mergers between 1981 and 1996 and find excess returns of 0.3 percent per month. Table 3.2 shows their findings in detail. A 2000 study by these authors had found excess returns of approximately 1 percent per month, or annual excess returns of 12.5 percent. Their main concern is the question why the excess returns achieved by merger arbitrage do not disappear. Economic theory suggests that excess returns should disappear as a result of arbitrage activity. Baker and

TABLE 3.2 Merger Arbitrage Returns for Different Portfolios

Portfolio	Value-Weighted			Equal-Weighted		
	Mean (%)	SD (%)	Sharpe ratio	Mean (%)	SD (%)	Sharpe ratio
Panel A: Arbitrage portfolios, all offers						
All deals	1.54	4.25	0.23	1.55	2.54	0.39
Cash deals	1.62	4.84	0.22	1.48	3.13	0.29
Stock deals	1.67	4.42	0.25	1.97	4.81	0.29
Panel B: Arbitrage portfolios, first offers						
All deals	1.63	3.49	0.3	1.51	2.72	0.35
Cash deals	1.76	4.32	0.28	1.4	3.3	0.25
Stock deals	1.4	4.62	0.18	1.95	5.03	0.27
Panel C: Market returns						
Market	1.21	4.16	0.15	1.41	5.08	0.17
T-bills	0.57	0.24		0.57	0.24	

Source: M. Baker and S. Savasoglu, "Limited Arbitrage in Mergers and Acquisitions," *Journal of Financial Economics* 64, no. 1 (April 2002), 91–115.

Savasoglu contend that arbitrageurs are limited in number and constrained in capital, and that this limited arbitrage explains excess returns.

Ben Branch and Jia Wang are the first academic researchers to examine stock-for-stock mergers with a collar.¹⁴ Their sample consists of 187 collar deals between 1994 and 2003. Their findings replicate the nonlinear return characteristics of merger arbitrage: In severely declining markets, returns from merger arbitrage are highly correlated with the market, but they remain largely uncorrelated under normal market conditions. They quantify the mischaracterization of excess returns if mean-variance analysis is applied to merger arbitrage. Under CAPM, excess returns are 11.88 percent, but they amount to only 6.3 percent when contingent claims analysis is used. The threshold level for severely declining markets found by Branch and Wang is -3.7 percent, which is close to the -4 percent level found by Mitchell and Pulvino.

Branch and Wang constructed two merger arbitrage portfolios. The first, Strategy I, consists of the target common stock, which is held until the closing for fixed value collars, or delta hedged for fixed share collars. The second portfolio, Strategy II, is always delta hedged, irrespective of the type of collar. Figure 3.11 shows the result of these two strategies. It can be seen that merger arbitrage returns are most often negative when the market also has negative returns. These events are the dots in the lower-left quadrants of the charts.

In a 2006 update of the study, Ben Branch and Taewon Yang¹⁵ find that fixed-value collars yield better merger arbitrage performance than fixed-share collars.

PERFORMANCE OF MERGER ARBITRAGE OUTSIDE THE UNITED STATES

While the bulk of mergers and hence arbitrage opportunities occur in the United States there is substantial deal flow in Europe and Asia. The problem with investments in these markets is that market structure and legal frameworks are different enough from one country to the next to make comparisons difficult. Due to the small number of mergers in many countries any single-country study must be conducted with a comparatively small data set. Cross-border mergers complicate the analysis further because two or more jurisdictions are implicated, and special cross-border rules apply.

Several studies show that merger arbitrage can be successful in non-U.S. markets. However, arbitrageurs must be careful because the legal framework differs drastically from that in the United States. Most European countries, for example, have takeover regimes that are based on the U.K. City Code, which will be discussed later. The advantage of these regimes is that the

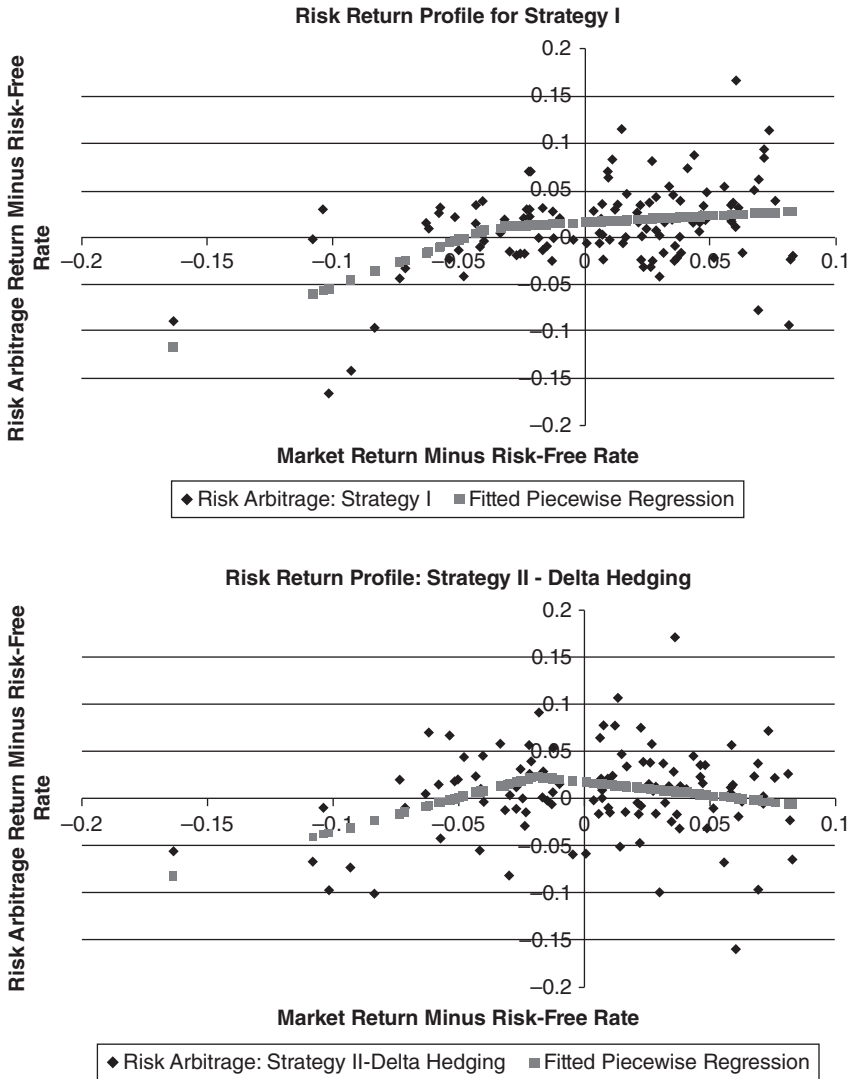


FIGURE 3.11 Piecewise Linear Regression of Excess Merger Arbitrage Returns

timeline for the closing of a merger is very well defined. The drawback is that shareholders have fewer rights to influence management. On the positive side, this is offset by easier access to courts and generally lower cost of litigation, although shareholders do not have the benefit of pooling resources through class actions.

Andrew Karolyi and John Shannon¹⁶ (1999) examined 37 Canadian acquisitions during the year 1997 with a deal value of at least \$50 million. They conclude that a portfolio invested in these merger arbitrage transactions has a beta of 0.39 and an annualized excess return of 33.9 percent over the Toronto Stock Exchange index TSE 300.

Christoph Maxheim¹⁷ studies merger arbitrage between August 1999 and October 2006 in three countries: Austria, Germany, and Switzerland. The results for Austria look unfavorable due to the uncharacteristically strong performance of the Austrian Traded Index ATX benchmark over the period of the study. He finds that merger arbitrage in Austria outperforms the ATX index by 2.41 percent; in Germany, it outperforms the Deutscher Aktienindex DAX by 3.97 percent; and in Switzerland, it outperforms the Swiss Performance Index SPI by 2.73 percent annually. Maxheim considers stock-for-stock deals, cash deals, and mixed stock and cash deals. His results are difficult to compare with those of other studies because he does not include transaction costs and calculates raw returns rather than risk-adjusted returns.

These results are confirmed by Rohani and Wanzelius,¹⁸ who investigate 212 mergers in Europe between the years 1997 and 2005. They find that a passive merger arbitrage strategy generates abnormal returns of between 2.27 and 3.24 percent. For a semi-active portfolio, in which the arbitrageur invests only in mergers with attributes that statistically have a high probability of completion, the excess return is 2.76 percent. Finally, they find that a portfolio that consists of reverse merger arbitrage (see Chapter 4) has a negative excess return; even a portfolio of only reverse arbitraging hostile transactions generates negative excess returns.

Only looking at U.K. mergers, Cao, Goldie, Liang and Petrasek¹⁹ find a positive risk-adjusted return of 0.94 percent per month for 975 cash and stock mergers using a Fama-French three-factor model. They confirm the existence of a nonlinearity for severe market downturns. This study is notable for having the largest sample size of all studies outside the United States.

A study of 193 mergers in Australia between 1991 and 2000 by Krishnan Maheswaran and Soon Chin Yeoh²⁰ finds excess returns of 0.84 to 1.20 percent before transaction costs. Once transaction costs of 0.15 percent stamp duty, commissions of 0.30 percent, and 0.50 percent market impact are taken into account, excess returns are no longer significant. They structure a time-weighted portfolio following Mitchell and Pulvino's methodology. Interestingly, they do not find that the market-neutral behavior of merger arbitrage disappears in down markets. The threshold level that minimizes squared residuals in their piecewise linear regression is located at -2 percent rather than the -4 percent found by Mitchell and

Pulvino for the U.S. market. However, they do not find that there is a statistically significant difference between the two segments of the piecewise linear regression. In other words, merger arbitrage in Australia does not behave differently in severely declining markets than under normal market conditions.

In China, there are very few investable mergers and acquisitions to date in which arbitrageurs could have invested. The first public tender offer was only made in June 2003 after securities regulators issued Administrative Measures on the Acquisition of Listed Companies. A particularity of the Chinese market is the existence of mandatory tender offers that holders of more than 30 percent of the shares are required to make to the holders of the freely circulating (i.e., not held by the state) shares. Because many 30 percent holders do not actually intend to acquire the firm they are invested in, these tender offers are made at a discount (sometimes at more than a 50 percent discount) to the market price in order to discourage shareholders from tendering their shares. As a result, the only merger arbitrage study²¹ in the Chinese market has to work with a limited data set of only 22 tender offer bids between 2002 and 2006 in which a real acquisition attempt was made. The results of merger arbitrage in the Chinese market are discouraging for any hopeful arbitrageur: Annualized abnormal returns are -4.14 percent. Therefore, it is better to invest in the Chinese market directly than to conduct merger arbitrage in China.

In connection with Chinese mergers, U.S.-listed Chinese companies deserve a particular mention. During the years 2010 to 2011, these companies went through their own merger wave, which was driven by the valuation discrepancy between high valuations for domestic firms in China and Hong Kong and substantial discounts to these valuations for Chinese firms in the U.S. market. As a result, many management teams sought to take their firms private, most likely with the intention of floating them in the Chinese market at a higher valuation later. However, at that time two securities companies exposed a number of frauds among Chinese firms. This led to a generalized fear of Chinese firms listed in the United States, so that merger spreads for Chinese companies widened substantially. Even in one case of a firm undergoing a private-equity sponsored management buyout, Harbin Electric, allegations of fraud were made. Although the merger spread went through a roller coaster, the merger eventually closed and as the company is private today it cannot be known whether the fraud allegations were valid or not.

Overall, the evidence points to merger arbitrage as a valid strategy not only in the United States but international markets also. In fact, Europe has a well-developed merger arbitrage community, and so does Asia. Some Asian arbitrageurs are now even active in markets that generally are still considered

emerging markets like Thailand, South Korea, and Malaysia. Clearly, the less developed a market the less deal flow presents itself, not to mention country-specific risks and language barriers that can make it prohibitive for outside investors to engage in arbitrage.

RISK AND RETURN OF MERGER ARBITRAGE FUNDS

The previous sections discussed academic studies of merger arbitrage analyzed hypothetical passive portfolios. These portfolios were constructed on the basis of some assumption about the allocation of capital in a passive manner to mergers active at any one time. Merger arbitrageurs, however, take an active approach to managing their portfolios. Two types of arbitrageurs are active:

1. *Concentrated arbitrageurs* invest in a small number of mergers only and take big bets on each of these transactions closing. Most arbitrageurs in investment banks and broker/dealers fall into this category. Each transaction they invest in has a high probability of closing and hence provides only a small expected return. In order to get to a double-digit level of return expected by investors, the arbitrageurs leverage their portfolios. In investment banks, the funding can be achieved near the London Interbank Offered Rate (LIBOR), whereas merger arbitrage hedge funds finance their leverage at a higher cost of capital. Therefore, the latter need a higher level of leverage in order to achieve the desired level of return. A drawback of this approach is that any unforeseeable event that leads to a widening of spreads, or even a collapse of a deal, will have a large impact on the portfolio and lead to a substantial draw-down. However, many arbitrageurs and investors find the prospect of extended periods of stable returns appealing, even if they are achieved at the price of short bouts of significant losses.
2. *Diversified arbitrageurs* invest in a larger number of transactions. Therefore, they are more likely to be affected by the collapse of a merger. Through a careful analysis of the severity of each transaction, combined with position limits and diversification, the impact of any losses after a deal's collapse on the overall portfolio can be managed.

The returns of hedge funds are tracked by a number of databases. Each of these databases calculates a number of subindices, including indices of hedge funds that specialize in merger arbitrage.

Barclay Hedge. Formerly The Barclay Group, this database began collecting hedge fund data in 1985 and has over 6,000 hedge funds with

total assets of over \$2.1 trillion. Merger arbitrage funds represent a mere \$30 billion of assets (Q1 2015).

Cogent Hedge. This database consists of over 5,000 active hedge funds and 15,000 funds in total.

Morningstar Crédit Agricole Structured Asset Management Center for International Securities and Derivatives Markets (CASAM CISDM). Formerly known as Managed Accounts Research (MAR), this database was created in 2005 when Crédit Agricole partnered with the University of Massachusetts Amherst and took over the MAR data. MAR started collecting data on hedge funds in 1992, and has data going back to 1990.²² The merger arbitrage index is a category of its own, unlike in the other databases. It contains 4,140 active hedge funds, 5,840 dead funds, and 31 active merger arbitrage funds (Q1 2014). Morningstar also took over the former MSCI Barra hedge fund indices.

Greenwich Alternative Investments. Formerly known as Van Hedge Fund Advisors, this database covers 7,000 hedge funds going back to 1996. Merger arbitrage is classified as a substrategy of event-driven funds within the market-neutral equity strategy.

Hedge Fund Research (HFR). The HFR database contains over 16,000 funds in the aggregate. The Merger Arbitrage Index is considered a subcategory of the event-driven index. HFRI is calculated monthly from all hedge funds, both open and closed to new investors, and is available from 1990. HFRX was initially a monthly calculation of investable hedge funds but now is comprised of UCITS-compliant funds with daily NAVs.

Hennessee Group. This database has collected hedge fund data since 1987. Merger arbitrage is classified as a substrategy of the broader Arbitrage/Event-Driven category and its data are available from July 1994. At the time of writing, Hennessee was reviewing its indices and had last published performance data for March 2014.

Lipper TASS. Formerly Tremont TASS, it was acquired by Lipper/Reuters in 2005. This database contains over 6,300 hedge funds and over 7,000 “graveyard” funds.

Merger arbitrage hedge funds have grown in size since the 1990s, when they were first offered on a larger scale to the investing public. The growth of total assets managed by merger arbitrage funds is shown in Figure 3.12. During the immediate post-Internet bubble years, growth in assets under management (AUM) was particularly strong. The general decline in hedge fund assets following the financial crisis in the year 2008 is also reflected

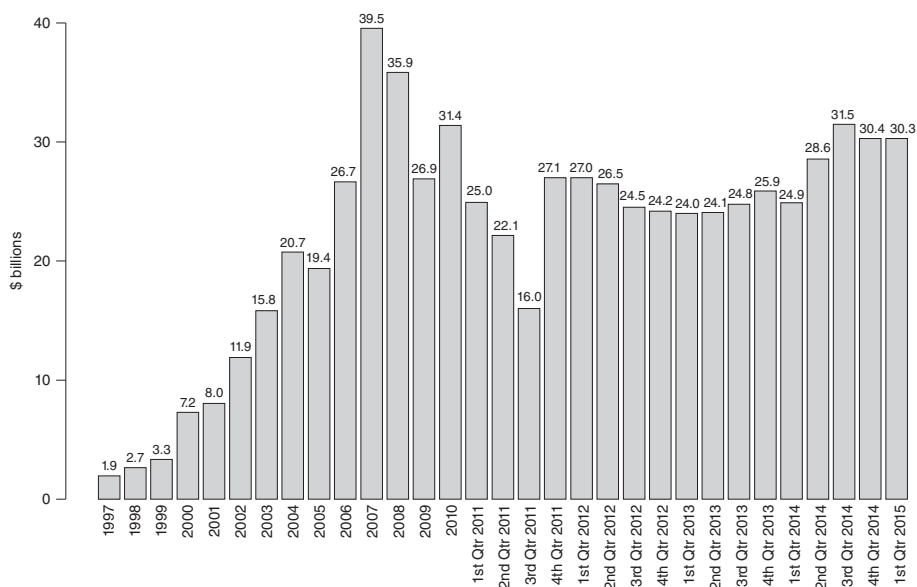


FIGURE 3.12 Assets Managed in Merger Arbitrage Funds
Source: Barclay Hedge, LTD.

in merger arbitrage, even though the strategy held up well throughout the meltdown. Since 2011, assets have increased again but at the time of writing have yet to regain their peak of the year 2007. Even though hedge fund assets in general are back to their pre-crisis levels, merger arbitrage assets are still substantially below their peak.

It should be noted that some funds will use leverage to increase their exposure, so that the total dollar amount of merger arbitrage investments controlled by hedge funds is higher than the net shown in the figure. Since merger arbitrage is a low-volatility strategy, a higher level of leverage can be justified than for other hedge fund strategies.

One of the problems encountered when constructing merger arbitrage fund indices is that many merger arbitrage managers do not restrict themselves to a pure merger arbitrage strategy but also invest in related strategies, notably liquidations, spin-offs, activist situations, or restructurings (bankruptcies). These styles are not necessarily constant but can drift over time. Other problems are related to more fundamental weaknesses of the databases that make their numbers biased. Some databases drop funds that close down from the calculation of the returns, not only after the date of the closing of the fund but even for historical returns when the fund was operating. As funds that close typically do so after poor performance, the averages include only well-performing funds and are biased to the upside. Some data providers are said to have fixed this problem and now provide indices without this type of survivorship bias. Nevertheless, other problems remain. For example, the data providers rely on voluntary reporting by managers, and not all managers choose to report. Managers do not necessarily report from the time their fund was started but often run their funds for a year or two before reporting their historical performance since inception. In cases where the fund had poor performance, the manager will simply shut down the fund without ever reporting.

For the remainder of this section, the properties of five of the hedge fund indices will be compared to the S&P 500 and the Barclays Aggregate Bond Index. The S&P 500 and Barclays indices represent the performance of the stock and bond markets overall, respectively. The five merger arbitrage hedge fund indices selected were those of Hedge Fund Research (HFRI and HFRX), CASAM CISDM, Barclay Hedge, and Greenwich. Data for all of these indices are available through the end of the year 2014. However, the indices have different start dates. Hedge Fund Research covers the longest period of time, starting in January 1990. CASAM starts in January 1993. Greenwich starts in January 1997. The Barclay Hedge is by far the shortest index, starting only in January 2001.

Monthly returns for the five indices are shown in Figure 3.13. The S&P 500 index is by far the most volatile. Bonds often move in the opposite

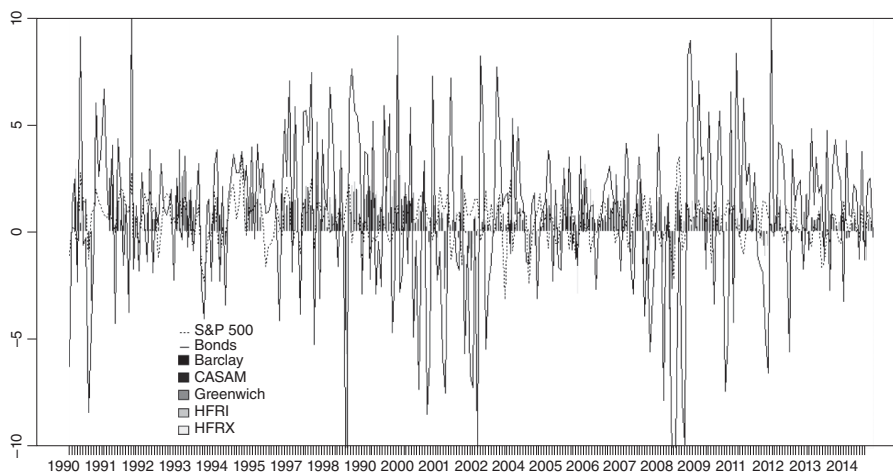


FIGURE 3.13 Monthly Performance of Merger Arbitrage Hedge Funds, the S&P 500, and Bonds

direction when the S&P 500 falls, except in some instances where a severe drop in the S&P 500 drags down bonds as well as the hedge fund indices. For the remainder of this chapter, monthly returns are used to analyze performance, unless noted otherwise. Monthly data have the disadvantage of masking the true volatility, because extreme moves are so rare that they are not captured by monthly data that cover, in the longest series, a quarter century. However, since hedge funds report their performance only monthly, daily data is not available. Some hedge fund products with daily NAV calculations have become available recently, and numerous indices discussed in later chapters seek to calculate hypothetical daily merger arbitrage performance. However, all of these potential sources suffer from relatively recent inception and do not lend themselves for meaningful long-term analysis.

Summary statistics for the selected data are shown in Table 3.3. The comparison of the series is made difficult due to their different length. For example, the worst drawdown of the shortest index, Barclay, appears to be only roughly half as bad as the drawdown of the longest index, HFR. However, the -6.46 percent drop in the HFR merger arbitrage index occurred in January 1990, the first month that this index was constituted. The other indices did not even exist at that time. It is pointless to speculate what their performance might have been in that month, even though most reasonable observers would probably suspect they may have suffered a comparable drawdown. Similarly, the indices that have been in existence for longer appear to have higher returns than the ones that started reporting later. This finding reflects mostly the high returns generated by merger arbitrage during the 1990s, whereas the new millennium saw returns that were generally lower. Therefore, the indices that started later appear to perform more poorly than the older indices.

Figure 3.14 shows the cumulative performance of the five merger arbitrage hedge fund indices, the S&P 500 index, and bonds. It can be seen in the upper chart that the three merger arbitrage indices have a performance that lies close to each other. The S&P 500 overall exhibits a similar cumulative performance, albeit with much larger fluctuations. Bonds have a much lower overall performance but fluctuate in similar ways as the merger arbitrage hedge funds. For this reason, merger arbitrage is often labeled as a strategy with equity-like returns at bond-like volatility.

The lower chart in Figure 3.14 shows the drawdown from the most recent peak of each index. Drawdowns for the three merger arbitrage fund indices as well as for bonds are so small that they are difficult to discern visually on the chart. In contrast, the S&P 500 index experiences frequent losses. Its most dramatic drawdown occurred between early 2000 and late 2002, where it lost over 40 percent of its value.²³

The risk/return trade-off for merger arbitrage compared to the S&P 500 and bonds is shown in Figure 3.15. All indices are shown from their

TABLE 3.3 Statistics of Monthly Return for Merger Arbitrage Hedge Fund Indices Compared to Stocks and Bonds over a Quarter Century, 1990–2014

	HFRI	CASAM	Barclay	Greenwich	HFRX	Bonds	S&P 500
Observations	300	300	216	215	204	300	300
NAs	0	0	84	85	96	0	0
Minimum	0.0646	0.0561	0.0457	0.0490	0.0456	0.0336	0.1679
Quartile 1	0.0017	0.0026	0.0017	0.0016	0.0004	0.0009	0.0166
Median	0.0078	0.0066	0.0067	0.0060	0.0047	0.0062	0.0130
Arithmetic Mean	0.0066	0.0070	0.0060	0.0056	0.0044	0.0053	0.0086
Geometric Mean	0.0065	0.0069	0.0060	0.0056	0.0043	0.0053	0.0077
Quartile 3	0.0137	0.0122	0.0118	0.0118	0.0100	0.0124	0.0356
Maximum	0.0312	0.0474	0.0300	0.0276	0.0329	0.0387	0.1144
SE Mean	0.0007	0.0006	0.0007	0.0007	0.0007	0.0006	0.0024
LCL Mean (0.95)	0.0053	0.0057	0.0047	0.0043	0.0030	0.0041	0.0038
UCL Mean (0.95)	0.0079	0.0082	0.0074	0.0070	0.0057	0.0065	0.0134
Variance	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0018
Stdev	0.0114	0.0109	0.0101	0.0100	0.0101	0.0106	0.0423
Skewness	-2.0145	-0.9000	-1.2458	-1.3664	-1.0758	-0.2542	-0.6215

respective inception. All merger arbitrage hedge fund indices exhibit a volatility that is comparable to that of the Barclays Aggregate Bond Index. However, returns are mostly higher. Only the HFRX merger arbitrage fund index underperforms bonds. This can be attributed in part to the shorter length of this index.

Figure 3.16 shows the discrepancy between the merger arbitrage hedge fund indices. The HFR index is used as a baseline, and the performance of HFR is calculated relative to each other index. Overall, the indices are quite close to one another, with a divergence emerging most notably during the market turmoil of 2008.

Similar effects can be seen when the indices are compared to the S&P 500. Table 3.4 shows some risk statistics in a CAPM framework. The statistics shown are frequently used to evaluate performance and risk. Here are some of the less common statistics:

Beta+ and Beta-. These are betas calculated only for months in which the S&P 500 was up (beta+) or down (beta-).

Tracking error. The standard deviation of the difference between the portfolio and index returns. It measures how closely an investment follows the benchmark.

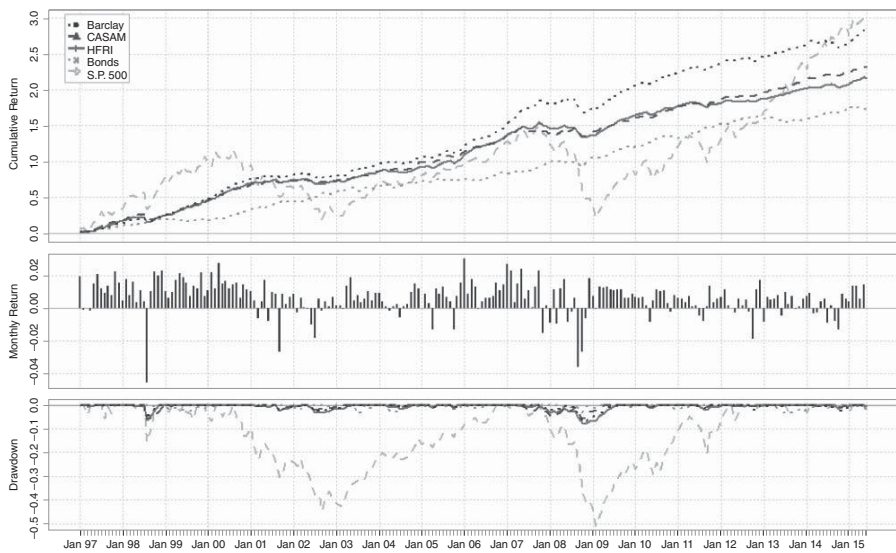


FIGURE 3.14 Performance of Three Merger Arbitrage Hedge Fund Indices Relative to Stocks and Bonds

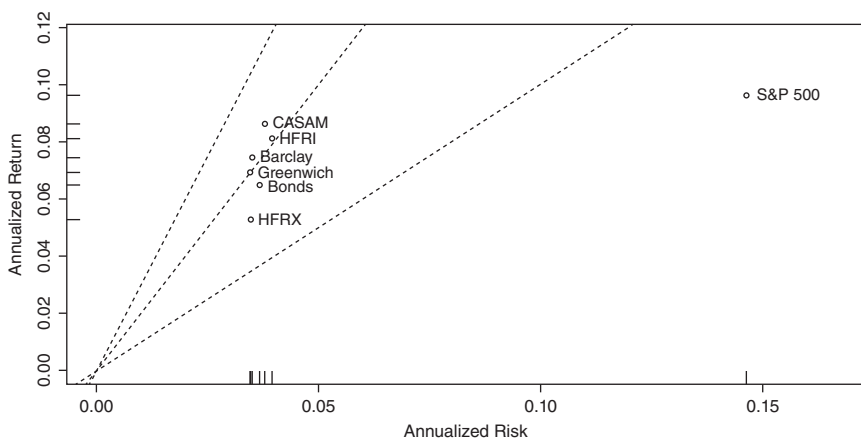


FIGURE 3.15 Risk/Return Trade-off for Merger Arbitrage

Active premium. The annualized return minus the benchmark's annualized return.

Information ratio. Measures the active return of an investment manager divided by the amount of risk the manager takes relative to a benchmark. It is defined as active return divided by tracking error.

Treynor ratio. The excess performance of the portfolio per unit of market risk (beta) assumed.

Sharpe ratio. The risk-adjusted return. For comparison, the Sharpe ratio for the S&P 500 since 1990 is 0.66 with a risk-free rate of zero.

Sortino ratio. A variation of the Sharpe ratio that incorporates only volatility to the downside. By excluding volatility to the upside, only the harmful aspect of fluctuations is considered. After all, upside volatility is beneficial to the investor. For comparison, the Sortino ratio for the S&P 500 since 1990 is 0.15.

It was discussed earlier that CAPM risk measurements are of limited use when nonlinear strategies such as merger arbitrage are evaluated. A number of other measures have been developed that evaluate the risk of loss. Table 3.5 shows these risk metrics for merger arbitrage funds, bonds, and stocks. It can be seen that most of the merger arbitrage measures are of comparable magnitude as those of bonds, confirming the earlier observation:

Semi deviation. Calculates the standard deviation only for observations that are below the mean.

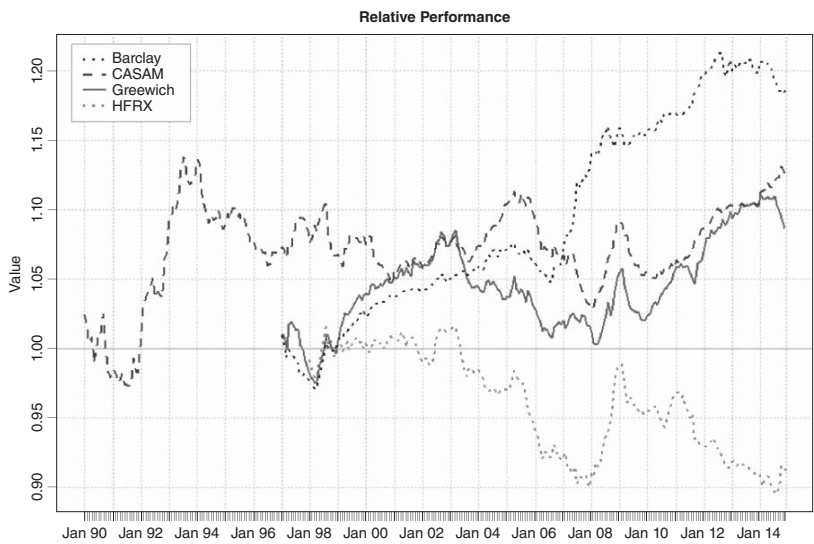


FIGURE 3.16 Performance of Various Merger Arbitrage Hedge Fund Indices Relative to the HFR Hedge Fund

TABLE 3.4 CAPM* Statistics of the Merger Arbitrage Hedge Fund Indices, Relative to the S&P 500

	HFRI	CASAM	Barclay	Greenwich	HFRX
Alpha	0.0007	0.0012	0.0009	0.0005	-0.0004
Beta	0.1639	0.1522	0.1607	0.1614	0.1466
Beta+	0.1034	0.0833	0.1213	0.1262	0.1057
Beta-	0.2576	0.2462	0.1963	0.1894	0.1671
R-squared	0.2227	0.2031	0.2869	0.2912	0.2489
Annualized Alpha	0.0089	0.0142	0.0113	0.0061	-0.0049
Correlation	0.4719	0.4507	0.5357	0.5396	0.4989
Correlation <i>p</i> -Value	0.0000	0.0000	0.0000	0.0000	0.0000
Tracking Error	0.1305	0.1319	0.1414	0.1415	0.1446
Active Premium	-0.0150	-0.0099	-0.0038	-0.0094	-0.0118
Information Ratio	-0.1150	-0.0747	-0.0267	-0.0665	-0.0817
Treynor Ratio	0.0862	0.1249	0.0948	0.0630	-0.0200
Sharpe Ratio*	0.3575	0.5027	0.4344	0.2945	-0.0841
Sharpe Ratio†	2.0527	2.2839	2.1177	2.0053	1.5185
Sortino Ratio (MAR=0)	0.9239	1.2020	1.0483	0.9697	0.7090

*The Barclays Aggregate Bond Index is used as a proxy for the risk-free rate, which averaged 6.4 percent over the period.

†The risk-free rate is set to zero for the calculation of the Sharpe Ratio shown on this line.

Gain deviation. The standard deviation only of observations that generate a gain.

Loss deviation. The standard deviation in months in which there is a loss. It is a subset of the semi deviation.

Downside deviation. The standard deviation for months in which the index had a worse performance than the minimum acceptable return (MAR) of 10, and 0 percent.

Upside/downside capture ratio. It shows the fraction of the up (down) movement of the S&P 500 captured by the index. A negative downside capture means that the index increased when the S&P decreased.

A different way to look at the performance of merger arbitrage is to rank it relative to other indices and other strategies. Table 3.6 shows the ranking against a number of traditional strategies. This ranking is also referred to as a *Callan Chart*. Many asset classes, in particular REITs and commodities, rank as top performers in one year or two, followed by bottom performance. Merger arbitrage stands out as a strategy that never delivers an outstanding performance, but also never disappoints. Instead, it is a middle-of-the-road

TABLE 3.5 Various Downside Risk Measures

	Barclay	CASAM	Greenwich	HFRI	HFRX	Bonds	S&P 500
Semi Deviation	0.0080	0.0082	0.0079	0.0094	0.0079	0.0078	0.0321
Gain Deviation	0.0062	0.0076	0.0060	0.0063	0.0060	0.0070	0.0240
Loss Deviation	0.0098	0.0113	0.0100	0.0128	0.0091	0.0066	0.0309
Downside Deviation (MAR=10%)	0.0091	0.0089	0.0092	0.0102	0.0099	0.0095	0.0320
Downside Deviation (Rf=0%)	0.0058	0.0058	0.0058	0.0071	0.0061	0.0053	0.0280
Downside Deviation (0%)	0.0058	0.0058	0.0058	0.0071	0.0061	0.0053	0.0280
Maximum Drawdown	0.0718	0.0575	0.0714	0.0806	0.0546	0.0515	0.5095
Historical VaR (95%)	-0.0097	-0.0096	-0.0099	-0.0123	-0.0136	-0.0134	-0.0703
Historical ES (95%)	-0.0214	-0.0216	-0.0213	-0.0261	-0.0224	-0.0187	-0.0952
Modified VaR (95%)	0.0130	0.0123	0.0132	0.0158	0.0143	0.0127	0.0669
Modified ES (95%)	-0.0276	-0.0320	-0.0293	-0.0410	-0.0273	-0.0193	-0.0992
Upside Capture Ratio	0.2679	0.3174	0.2582	0.3117	0.2158	0.1839	N/A
Downside Capture Ratio	-0.0167	-0.0198	-0.0015	0.0017	0.0095	-0.1117	N/A

strategy. This is a manifestation of the lower volatility of this asset class compared to the others.

When compared to other hedge fund strategies (Table 3.7) this effect is less pronounced but still persists. Most hedge fund strategies have lower volatility than traditional investment indices, albeit higher than merger arbitrage. Therefore, their rankings are clustered around merger arbitrage and are more competitive with merger arbitrage than traditional indices.

BENEFITS OF MERGER ARBITRAGE IN A DIVERSIFIED PORTFOLIO

One of the most important insights of modern portfolio management is that investments should not be judged on a stand-alone basis but in the context of a portfolio. This does not mean that an investment does not need to be evaluated carefully. Investors in merger arbitrage funds regularly go to great lengths to conduct due diligence on each of their funds and its portfolio managers. Rather, what the portfolio context refers to is that the characteristics of a risky investment can change when it is used in connection with

other investments. For example, selling short a stock is a risky undertaking, because losses are potentially unlimited if its price rises. However, as we have seen, when short selling is used as part of a merger arbitrage strategy, it is a prudent investment strategy that captures the arbitrage spread in a stock-for-stock deal.

Similar arguments can be made for merger arbitrage as an investment strategy. Although it can be argued that merger arbitrage has a large downside potential, this effect can be mitigated if merger arbitrage is used as one element of a well-diversified portfolio. Diversification is the key: If one investment zigs, the other might zag. This will keep the overall value of the portfolio more stable. The key is to select investments that have a low correlation with one another.

The effect of adding merger arbitrage to an investment portfolio can best be shown graphically. Charts that denote the risk/return trade-off of merger arbitrage have already been presented several times. In modern portfolio construction, these charts usually contain an upward-sloping line referred to as the efficient frontier. The efficient frontier denotes the optimal portfolio for a given level of risk. For example, the lower series of dots in Figure 3.17 shows the efficient frontier for a portfolio consisting of the S&P 500 and the Barclays Aggregate Bond Index. As previously, the Barclays index is used as a proxy for bonds. This portfolio will be referred to as a traditional portfolio because it contains only standard assets. The efficient frontier denotes the best return that can be achieved for a given level of risk. For example, if an investor is willing to accept a risk level of 3 percent (i.e., 0.03), then the best return that can be achieved by combining the S&P 500 and bonds is roughly 0.75 percent per month. The different points along the efficient frontier represent different combinations of stocks and bonds in steps of 2 percent. The leftmost point on the frontier is a portfolio that consists entirely of bonds; it has the lowest risk and the lowest expected return. The rightmost point of the efficient frontier is a portfolio that consists entirely of the S&P 500. It has the highest return of all feasible portfolios but also the highest risk. The middle point represents a portfolio consisting half of stock, half of bonds. The gray part of the efficient frontier to the far left represents linear combinations of the S&P 500 and the Barclays Aggregate Bond Index that are suboptimal. They are included because they are possible. There are three such portfolios: 0 percent stocks with 100 percent bonds, and 2 percent stocks with 98 percent bonds. In these cases, an investor can get the same level of risk but a higher return by selecting a slightly higher level of stocks—these are the black points just above the gray points. The efficient frontier shown here is based on monthly data ranging from January 1990 through December 2014.²⁴

TABLE 3.6 Ranking of Merger Arbitrage Relative to Traditional Investment Strategies

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
CTAs 21.02	Russell 2000 46.04	Hedge Funds 21.22	Hedge Funds 30.88	Merger Arb 8.89	S&P 37.58	REITs 36.02	S&P 33.36	S&P 28.58	EAFE 31.68	REITs 29.61	Commo- dities 17.86
Bonds 8.96	Midcap 41.51	Russell 2000 18.41	EAFE 27.17	Hedge Funds 4.10	Midcap 34.45	S&P 22.96	Midcap 29.01	MSCI 19.15	Hedge Funds 31.29	Merger Arb 18.02	REITs 13.75
T-Bills 8.29	REITs 37.99	REITs 16.38	Merger Arb 20.24	T-Bills 3.98	Russell 2000 28.45	Hedge Funds 21.10	Russell 2000 22.36	EAFE 10.63	MSCI 26.27	Bonds 11.63	Bonds 8.44
Hedge Funds 5.81	Hedge Funds 32.19	Midcap 16.34	REITs 19.56	REITs 3.40	Hedge Funds 21.50	Midcap 19.00	MSCI 20.76	Midcap 10.09	Russell 2000 21.26	Commo- dities 8.89	Hedge Funds 4.62
Merger Arb 0.44	S&P 30.47	Merger Arb 7.90	Russell 2000 18.88	S&P 1.32	Bonds 18.47	Merger Arb 16.61	REITs 20.07	Bonds 8.69	S&P 21.04	Midcap 8.25	T-Bills 4.44
S&P -3.10	Merger Arb 17.86	S&P 7.62	MSCI 18.86	CTAs -0.65	Merger Arb 17.86	Russell 2000 16.49	Commo- dities 17.86	Commo- dities 7.90	Commo- dities 20.24	CTAs 7.86	Merger Arb 2.76
Midcap -11.50	Bonds 16.00	Bonds 7.40	Midcap 14.30	Russell 2000 -1.82	MSCI 17.43	MSCI 14.81	Hedge Funds 16.79	Merger Arb 7.23	Midcap 18.23	T-Bills 6.16	Russell 2000 2.49
Russell 2000 -19.48	MSCI 14.02	T-Bills 3.91	CTAs 10.37	Midcap -2.09	REITs 14.89	EAFE 9.57	Merger Arb 16.44	CTAs 7.0	Merger Arb 14.34	Hedge Funds 4.98	CTAs 0.84
MSCI -22.98	EAFE 6.82	CTAs -0.91	S&P 10.08	MSCI -2.44	CTAs 13.64	CTAs 9.12	EAFE 11.79	T-Bills 5.34	T-Bills 4.65	Russell 2000 -3.02	Midcap -5.62
EAFE -30.99	T-Bills 6.66	MSCI -3.31	Bonds 9.75	Bonds -2.92	EAFE 7.73	T-Bills 5.36	CTAs 10.89	Hedge Funds 2.62	Bonds -0.82	EAFE -8.46	S&P -11.89
Commo- dities NA	CTAs 3.73	EAFE -8.01	T-Bills 3.20	EAFE -3.43	T-Bills 6.21	Bonds 3.63	Bonds 9.65	Russell 2000 -2.55	CTAs -1.19	S&P -9.10	MSCI -15.25
REITs NA	Commo- dities NA	Commo- dities NA	Commo- dities NA	Commo- dities NA	Commo- dities NA	Commo- dities 0.44	T-Bills 5.47	REITs -16.96	REITs -4.33	MSCI -10.77	EAFE -17.54

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Commo- dities 16.61 CTAs 12.36	Russell 2000 47.25 Midcap 40.06	REITs 32.06 Midcap 20.22 Russell 2000 18.33 S&P 10.88	EAFE 25.96 Midcap 14.34 MSCI 13.74 S&P 12.65	REITs 35.35 Russell 2000 18.37 Commo- dities 18.02 S&P 15.79	Hedge Funds 9.96 CTAs 7.64 Bonds 6.97 Midcap 5.60	CTAs 14.09 Bonds 5.24 T-Bills 2.29 Commo- dities -0.87 Merger Arb 7.05 Merger Arb -5.37	Midcap 40.48 REITs 28.47 Russell 2000 25.48 S&P 27.17 S&P 26.46 MSCI 22.82	REITs 27.70 Russell 2000 26.85 Midcap 25.48 S&P 15.06 Hedge Funds 10.25 MSCI 7.83	Bonds 7.84 REITs 7.54 Commo- dities 6.25 S&P 2.11 Merger Arb 1.50	REITs 19.57 Midcap 17.28 Russell 2000 16.35 S&P 16.00 Commo- dities 14.24 EAFE 13.55	Russell 2000 38.82 Midcap 34.76 S&P 32.39 MSCI 26.25 EAFE 23.46 Hedge Funds 9.13	REITs 28.04 S&P 13.69 Midcap 13.22 MSCI 7.71 CTAs 7.61 Bonds 5.97
Merger Arb -0.87	Hedge Funds 19.55	MSCI 9.49	Hedge Funds 9.30	Merger Arb 14.24	S&P 5.49	Hedge Funds -19.03	EAFE 20.90	MSCI 7.83	T-Bills 0.12	EAFE 13.55	Hedge Funds 9.13	Bonds 5.97
Hedge Funds -1.45	EAFE 17.41	Hedge Funds 9.03	Merger Arb 6.25	EAFE 13.81	T-Bills 4.95	Russell 2000 -33.79	Hedge Funds 19.98	CTAs 7.05	Midcap -1.55	MSCI 13.07	Commo- dities 7.05	Russell 2000 4.89
Midcap -16.19	Commo- dities 16.44	Commo- dities 7.23	S&P 4.91	MSCI 13.52	MSCI 2.83	S&P -37.00	Merger Arb 11.65	Bonds 6.54	CTAs -3.09	Hedge Funds 6.36	Merger Arb 4.74	EAFE 3.20
Russell 2000 -20.48 S&P -22.10	CTAs 8.69	Bonds 4.34	Russell 2000 4.55	Hedge Funds 12.89	Commo- dities 2.76	REITs -37.56	Commo- dities 7.47	Merger Arb 4.60	Russell 2000 -4.18	Bonds 4.22	REITs 2.70	Hedge Funds 2.98
MSCI -25.20	Bonds 4.10	CTAs 3.30	T-Bills 3.01	T-Bills 4.78	EAFE 1.17	MSCI -40.11	Bonds 5.93	Commo- dities 4.08	Hedge Funds -5.25	Merger Arb 2.76	T-Bills 0.09	Merger Arb 1.69
EAFE -27.45	T-Bills 1.13	T-Bills 1.28	CTAs 1.71	CTAs 3.54	Russell 2000 -1.57 REITs -15.59	Midcap -41.46	T-Bills 0.28	EAFE 2.05	MSCI -7.56	T-Bills 0.11	CTAs -1.42	Commo- dities -5.37

TABLE 3.7 Ranking of Merger Arbitrage Relative to Other Hedge Fund Strategies

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Short 36.22	Macro 46.67	Emerg. Markets 30.87	Emerg. Markets 87.10	Short 18.53	S&P 37.58	Emerg. Markets 35.69	S&P 33.36	S&P 28.58	Equity Hedge 44.22	Short 34.63	Distress 13.28
Market 15.45	Fixed Income 41.83	Macro 27.17	Macro 53.31	Merger Arb 8.89	Equity Hedge 31.04	Event- Driven 24.84	Equity Hedge 23.41	Equity Hedge 15.98	Emerg. Markets 40.06	Merger Arb 18.02	Event- Driven 12.18
Equity Hedge 14.43	Equity Hedge 40.15	Distress 25.24	Distress 32.54	Emerg. Markets 7.65	Macro 29.32	S&P 22.96	Event- Driven 21.23	Bonds 8.69	Hedge Funds 31.29	Market Neutral 14.56	Emerg. Markets 11.51
Macro 12.56	Distress 35.66	Equity Hedge 21.32	Hedge Funds 30.88	Event- Driven 6.00	Event- Driven 25.11	Equity Hedge 21.75	Emerg. Markets 19.85	Market Neutral 8.30	Event- Driven 24.33	Bonds 11.63	Short 8.99
Bonds 8.96	Hedge Funds 32.19	Hedge Funds 21.22	Event- Driven 28.22	Hedge Funds 4.10	Hedge Funds 21.50	Hedge Funds 21.10	Macro 18.82	Merger Arb 7.23	S&P 21.04	Equity Hedge 9.09	Bonds 8.44
Distress 6.44	S&P 30.47	Event- Driven 19.46	Equity Hedge 27.94	Distress 3.84	Distress 19.74	Distress 20.77	Hedge Funds 16.79	Macro 6.19	Macro 17.62	Event- Driven 6.74	Macro 6.87
Hedge Funds 5.81	Event- Driven 27.42	Fixed Income 18.53	Fixed Income 22.67	Market Neutral 2.65	Bonds 18.47	Merger Arb 16.61	Merger Arb 16.44	Hedge Funds 2.62	Distress 16.94	Hedge Funds 4.98	Market Neutral 6.71
Merger Arb 0.44	Merger Arb 17.86	Short 10.05	Merger Arb 20.24	Equity Hedge 2.61	Merger Arb 17.86	Fixed Income 16.24	Distress 15.40	Event- Driven 1.70	Merger Arb 14.34	Distress 2.78	Fixed Income 5.37
Event- Driven -0.47	Bonds 16.00	Market Neutral 8.73	Market Neutral 11.11	Fixed Income 1.47	Market Neutral 16.33	Market Neutral 14.20	Market Neutral 13.62	Short -0.54	Fixed Income 7.35	Macro 1.97	Hedge Funds 4.62
S&P -3.10	Market Neutral 15.65	Merger Arb 7.90	S&P 10.08	S&P 1.32	Fixed Income 15.20	Macro 9.32	Fixed Income 12.52	Distress -4.23	Market Neutral 7.09	Fixed Income -3.03	Merger Arb 2.76
Fixed Income -12.11	Short -16.96	S&P 7.62	Bonds 9.75	Bonds -2.92	Emerg. Markets 9.02	Bonds 3.63	Bonds 9.65	Fixed Income -5.28	Bonds -0.82	S&P -9.10	Equity Hedge 0.40
Emerg. Markets NA	Emerg. Markets NA	Bonds 7.40	Short -7.50	Macro -4.30	Short -17.14	Short -4.00	Short 3.86	Emerg. Markets -36.39	Short -24.40	Emerg. Markets -9.39	S&P -11.89

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Short 29.17	Emerg. Markets 32.43	Distress 18.89	Emerg. Markets 13.29	Emerg. Markets 18.15	Emerg. Markets 20.39	Short 28.41	Emerg. Markets 35.00	S&P 15.06	Bonds 7.84	S&P 16.00	S&P 32.39	S&P 13.69
Bonds 10.25	Distress 29.56	Emerg. Markets 15.69	Equity Hedge 10.60	Distress 15.94	Macro 11.11	Bonds 5.24	Fixed Income 30.71	Distress 12.12	S&P 2.11	Fixed Income 10.99	Equity Hedge 14.28	Bonds 5.97
Macro 7.44	S&P 28.68	Event- Driven 15.01	Hedge Funds 9.30	S&P 15.79	Equity Hedge 10.48	Macro 4.83	Distress 28.14	Event- Driven 11.86	Merger Arb 1.50	Distress 10.12	Distress 14.05	Macro 5.58
Fixed Income 5.80	Event- Driven 25.33	S&P 10.88	Distress 8.27	Event- Driven 15.33	Hedge Funds 9.96	Merger Arb -5.37	S&P 26.46	Fixed Income 11.80	Fixed Income 0.82	Event- Driven 8.89	Event- Driven 12.51	Market Neutral 3.06
Distress 5.28	Macro 21.42	Fixed Income 10.49	Event- Driven 7.29	Merger Arb 14.24	Merger Arb 7.05	Market Neutral -5.92	Event- Driven 25.04	Emerg. Markets 11.74	Short Markets 0.35	Emerg. Markets 8.62	Hedge Funds 9.13	Hedge Funds 2.98
Market Neutral 0.98	Fixed Income 21.30	Hedge Funds 9.03	Short 7.28	Hedge Funds 12.89	Bonds 6.97	Hedge Funds -19.03	Equity Hedge 24.57	Equity Hedge 10.45	Distress -1.79	Equity Hedge 7.41	Market Neutral 6.46	Equity Hedge 1.81
Emerg. Markets -0.03	Equity Hedge 20.54	Equity Hedge 7.68	Macro 6.79	Equity Hedge 11.71	Event- Driven 6.61	Event- Driven -21.82	Event- Driven 19.98	Hedge Funds 10.25	Market Neutral -2.13	Hedge Funds 6.36	Fixed Income 5.68	Merger Arb 1.69
Merger Arb -0.87	Hedge Funds 19.55	Macro 4.63	Merger Arb 6.25	Fixed Income 10.78	S&P 5.49	Fixed Income -24.18	Merger Arb 11.65	Macro 8.06	Event- Driven -3.30	Bonds 4.22	Merger Arb 4.74	Fixed Income 1.24
Hedge Funds -1.45	Merger Arb 7.47	Bonds 4.34	Market Neutral 6.22	Macro 8.15	Market Neutral 5.29	Distress -25.20	Bonds 5.93	Bonds 6.54	Macro -4.16	Market Neutral 2.98	Emerg. Markets 3.67	Event- Driven 1.08
Event- Driven -4.30	Bonds 4.10	Market Neutral 4.15	Fixed Income 5.27	Market Neutral 7.32	Distress 5.08	Equity Hedge -26.65	Macro 4.34	Merger Arb 4.60	Hedge Funds -5.25	Merger Arb 2.76	Macro -0.44	Distress -1.39
Equity Hedge -4.71	Market Neutral 2.44	Merger Arb 4.08	S&P 4.91	Bonds 4.33	Short 4.72	Emerg. Markets -30.87	Market Neutral 1.43	Market Neutral 2.85	Equity Hedge -8.38	Macro -0.06	Bonds -2.02	Emerg. Markets -2.41
S&P -22.10	Short -21.78	Short -3.83	Bonds 2.43	Short -2.65	Fixed Income -0.74	Fixed Income -37.00	Short -24.03	Short -18.01	Emerg. Markets -9.70	Short -17.24	Short -18.60	Short -3.89

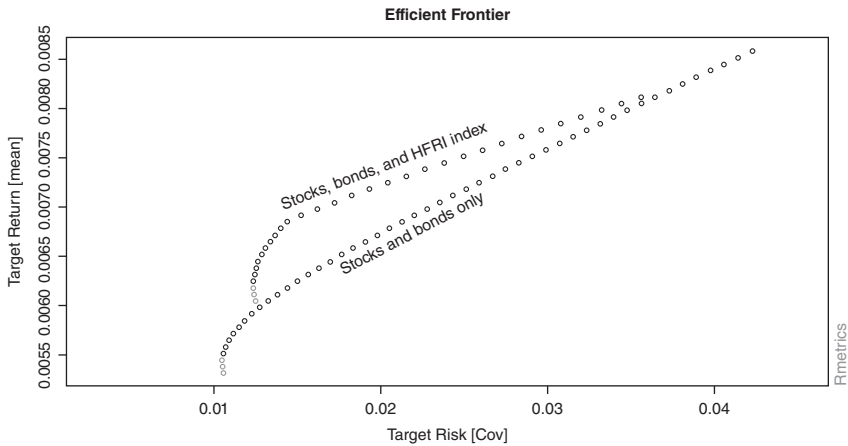


FIGURE 3.17 Efficient Frontiers for Combinations of Stocks and Bonds as well as Stocks, Bonds, and the HFR Index

When merger arbitrage is added to a traditional portfolio consisting of stocks and bonds, the returns that can be achieved for the same level of risks increase. Figure 3.17 shows two efficient frontiers: The lower series of points is the efficient frontier for a portfolio consisting only of the S&P 500 and bonds; the upper efficient frontier represents a portfolio that contains a third asset, the HFR merger arbitrage index. It can be seen that for a given level of risk, the portfolio with merger arbitrage will generate a higher expected return than that consisting only of stocks and bonds.

The weakest aspect of this analysis is that it is impossible to invest in an index. An index is a theoretical construct that assumes frictionless investments without transaction costs and infinite instantaneous liquidity for all of its constituents. This assumption is not even valid for standard stock indices like the S&P 500 index, and index funds inevitably underperform their own indices. For hedge funds, the assumptions implicit in indices are even less valid, because investors can access them only through private placements. Therefore, it is debatable whether hedge fund indices can even be called investable. To make their indices investable, some index providers attempt to include in their indices only funds that are open to new investors. Others seek to build indices that correspond to the entire universe of hedge funds representing the merger arbitrage strategy, including funds that no longer accept new investors. The indices used in the preceding analysis all fall into the latter category. Their advantage is that they represent the performance that can be achieved by the merger arbitrage strategy overall.

Moreover, comparing an actively managed portfolio with an unmanaged index is a conceptually questionable approach. Doing so overstates the performance that can be achieved with an index. An investor could at best invest in an index fund, which will underperform the index. It is not only management fees and expenses that make the fund underperform but also other frictions, such as commission costs and timing differences when constituents are added and removed from an index. A more realistic comparison of any managed vehicle should compare its returns to those of an index fund rather than the index itself, because the index is a purely theoretical construct.

Instead of using merger arbitrage hedge fund indices, the next analysis uses several mutual funds that employ merger arbitrage:

The Merger Fund (symbol: MERFX) is the oldest mutual fund that invests exclusively in merger arbitrage. It was launched in 1989.

The Arbitrage Fund (symbol: ARBFX) was launched in 2000 and also invests exclusively in merger arbitrage.

The Touchstone Merger Arbitrage Fund (symbol: TMGAX) has the shortest track record with a launch in the year 2011.

The Quaker Event Arbitrage Fund (formerly Pennsylvania Avenue Event-Driven Fund) (symbol: QEAAX) was launched in 2003 and utilizes several event-driven strategies, including merger arbitrage.²⁵

Several other mutual funds invest in merger arbitrage but are not included in this analysis in order to prevent the model from overfitting due to too much data: These funds include The Enterprise M&A Fund (symbol: EMAXX) and the Gabelli ABC Fund (symbol: GABCX). Several funds of Mutual Series also invest in merger arbitrage, among other strategies, going back to the days of Max Heine.

The S&P 500 index and Barclays Aggregate Bond index are replaced, respectively, by these index funds:

S&P Depositary Receipts, commonly abbreviated SPDR (symbol SPY), an index exchange traded fund (ETF)

iShares Core Aggregate Bond (symbol AGG), an exchange-traded fund that seeks to replicate the performance of the Barclays U.S. Aggregate Bond Index that was used as a proxy for bond investment earlier in this Chapter

The analysis covers the 11 years from November 2003 through December 2014. The scatter diagram of returns of the five funds can be seen in Figure 13.18. As before, the risk of the merger arbitrage funds is bond-like.

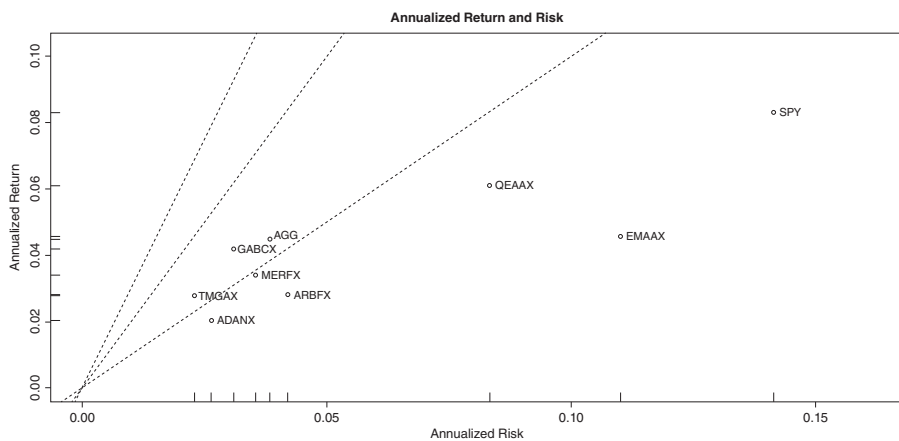


FIGURE 3.18 Risk/Return Trade-off for Mutual Funds That Use Merger Arbitrage

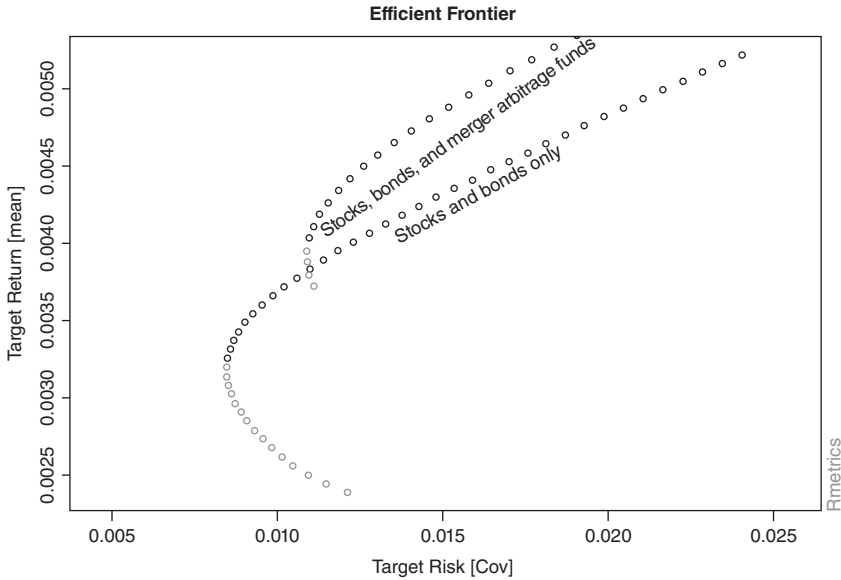


FIGURE 3.19 Efficient Frontier for Mutual Funds That Use Merger Arbitrage

However, unlike hedge fund indices, most merger arbitrage mutual funds underperform bonds. EMAAX has higher volatility with returns at the same level as bonds. QEAAAX has higher volatility than bonds, which is due to the other event strategies used by this fund in addition to its merger arbitrage portfolio, but compensates for that higher volatility through a higher return that places it overall in an intermediate position between stocks and bonds.

The efficient frontier is shown in Figure 3.19. The lower frontier shows a portfolio that consists only of the index funds SPY and AGG. The upper frontier shows portfolios that consist of all five funds, the index funds as well as ARBFX, MERFX, GABCX, EMAAX and QEAAAX. The same effect that was seen in Figure 3.17 can be observed here: When adding the merger arbitrage funds to a portfolio of stocks and bonds, a higher return can be achieved at the same level of risk.

BENEFITS OF MERGER ARBITRAGE IN A RISING INTEREST RATE ENVIRONMENT

At the time of writing, interest rates are stagnated at a historically low level. As a result, many investors are concerned about the risk that rising interest rates pose to their portfolios. Merger arbitrage can be an effective

diversification tool to mitigate this risk. As already shown, merger arbitrage has, in the long run, risk/return characteristics similar to bonds. Therefore, the relevant question to ask when discussing rising interest rates is whether merger arbitrage will behave similarly during periods of rising interest rates.

In examining this question, rising interest rates were defined as periods of time during which the 10-year Treasury yield realized a short-term trough followed by a short-term peak. Two criteria define a trough:

1. The lowest inflection point is between two peaks.
2. Inflection point must represent a new low point that is below previous troughs.

Similarly, two criteria define a peak:

1. The highest inflection point is between two troughs.
2. Inflection point must be greater than 1.5x in value than the most recent trough.

With these criteria, six periods of rising interest rates can be found between the years 1990 and 2014. Comparing the performance of merger arbitrage, bonds and the S&P 500 during these periods (Figure 3.20) it can be seen that merger arbitrage always outperformed bonds in periods of rising interest rates. In addition, it has consistently lower volatility than bonds during these periods of stress. It is clear that replacing bond exposure with merger arbitrage will de-risk a portfolio with respect to the prospects of increasing interest rates.

It is important to note that other hedge fund strategies perform less favorably in rising interest environments. Figure 3.21 compares performance and volatility of several popular hedge fund strategies in these circumstances. It is remarkable that several strategies have both higher volatility and worse performance than long equities, for which the S&P 500 acts as a proxy. Merger arbitrage and the broader event-driven category compare extremely favorably to other hedge fund strategies.

QUANTITATIVE EASING

A similar result as in the previous section can be obtained from splitting the 25-year history of event-driven returns into two distinct periods, prior to and during the unprecedented period of quantitative easing. The Federal Reserve initiated its policy of quantitative easing (QE) in late November 2008 and maintained it in several waves, labeled QE1, QE2, and QE3 by Fed watchers, through October 29, 2014.

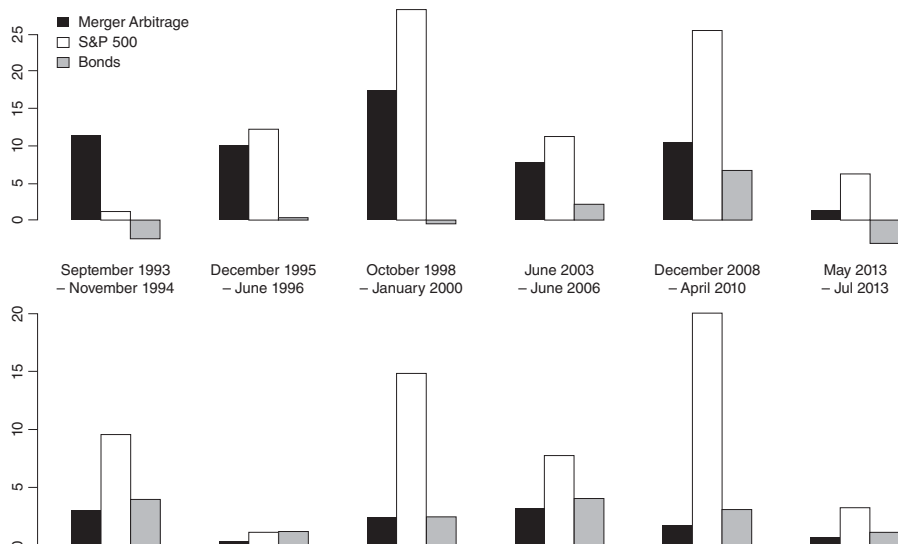


FIGURE 3.20 Performance of Merger Arbitrage in Periods of Rising Interest Rates

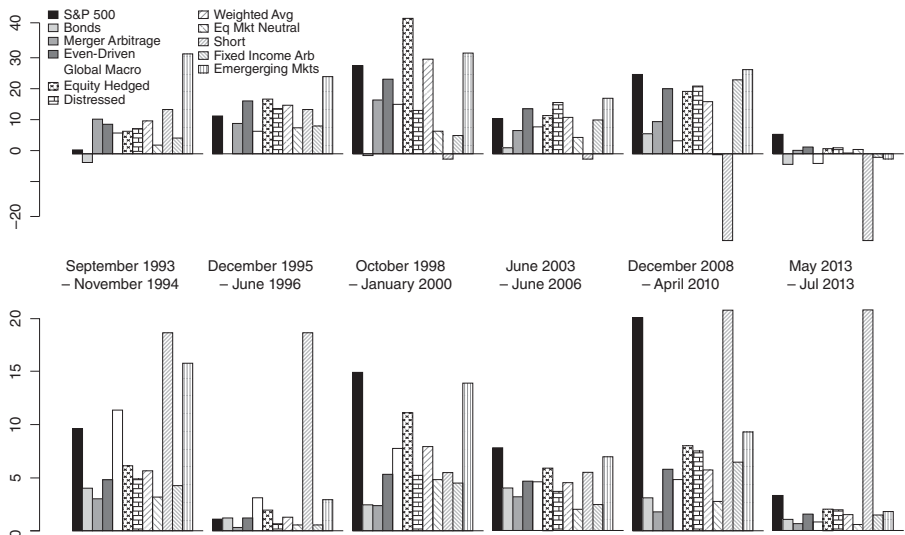


FIGURE 3.21 Performance of Several Hedge Fund Strategies in Periods of Rising Interest Rates

TABLE 3.8(a) Performance of Merger Arbitrage Prior to Quantitative Easing (1990–2008)

	Barclay	CASAM	Greenwich	HFRI	HFRX	Bonds	S&P 500
Median	0.0082	0.0084	0.0070	0.0096	0.0068	0.0066	0.0123
Arithmetic Mean	0.0070	0.0078	0.0063	0.0075	0.0052	0.0056	0.0068
Standard Deviation	0.0113	0.0120	0.0108	0.0125	0.0112	0.0111	0.0422

TABLE 3.8(b) Performance of Merger Arbitrage During Quantitative Easing (2008–2014)

	Barclay	CASAM	Greenwich	HFRI	HFRX	Bonds	S&P 500
Median	0.0057	0.0042	0.0054	0.0039	0.0031	0.0049	0.0200
Arithmetic Mean	0.0040	0.0044	0.0044	0.0036	0.0030	0.0047	0.0130
Standard Deviation	0.0071	0.0055	0.0081	0.0064	0.0077	0.0095	0.0438

TABLE 3.8(c) Performance of Merger Arbitrage After the End of Quantitative Easing (2014–2015)

	Barclay	CASAM	Greenwich	HFRI	HFRX	Bonds	S&P 500
Median	0.0073	0.0041	0.0041	0.0037	0.0060	0.0009	0.0096
Arithmetic Mean	0.0066	0.0034	0.0015	0.0034	0.0055	0.0019	0.0071
Standard Deviation	0.0089	0.0051	0.0097	0.0086	0.0050	0.0100	0.0273

The returns achieved by merger arbitrage investments compared to stocks and bonds in the three distinct periods prior to quantitative easing, during quantitative easing, and in the relatively short period since the end of quantitative easing and the writing of this book are shown in Table 3.8.

It can be seen that the historical pattern of merger arbitrage generating bond-like returns and volatility and about half the return of equities with only a quarter of the volatility broke down during the period of unprecedented monetary easing. During those times, merger arbitrage underperformed bonds, albeit with a volatility that was lower. Since the

end of quantitative easing, the benefits of merger arbitrage are becoming apparent again: It is outperforming bonds, which generate returns no better than cash. Despite its outperformance, it has nevertheless maintained a volatility well below that of bonds. Compared to equities, merger arbitrage now looks even more attractive than at any time since 1990. Since the end of quantitative easing, merger arbitrage has produced roughly half the performance of equities but with a volatility that is two-thirds to four-fifths lower. It is clear that we are entering an era in which merger arbitrage benefits to a portfolio are higher than in any prior period.

Incorporating Risk into the Arbitrage Decision

So far, all arbitrages were analyzed under the assumption that the merger would close. Unfortunately, life is not that easy for an arbitrageur. A small number of mergers are not completed. The usual outcome of non-completion is a drop in the share price of the target firm and steep losses for arbitrageurs. However, in rare instances, the collapse of a merger can lead to an increase in a stock's price. This happens very rarely. One of the few cases that I have seen was the attempted acquisition of Unisource Energy by Kohlberg Kravis Roberts & Co. Even in this case, the increase did not happen instantly after the announcement that the Arizona Corporation Commission voted to reject the buyout. On the day of the announcement, Unisource fell (see Figure 4.1). However, over the next month, Unisource rose and eventually exceeded the price that shareholders would have received in the merger. This is the one exception that proves the rule that collapsing mergers lead to a loss.

In other instances, shareholders are relieved when an acquisition fails and the share price appreciates instantaneously.

Most acquisitions are made at a significant premium to the most recent market price. Partly this is justified by the need to motivate current holders to forgo future upside, for example because buyers anticipate cost savings that they can share with the selling investors. At a minimum, this premium should be given back when a merger is canceled. Bigger losses are often possible because the composition of a company's shareholder base changes during the merger process. The interaction between long-term holders and arbitrageurs is an important factor that determines the extent of a drop. Long-term holders often sell their holdings, and arbitrageurs acquire these shares. If the merger collapses, arbitrageurs have little interest or incentive to hold the position much longer. They want to take their loss and move on to the next merger. Therefore, significant involvement by merger arbitrageurs in a collapsing transaction will exacerbate losses.

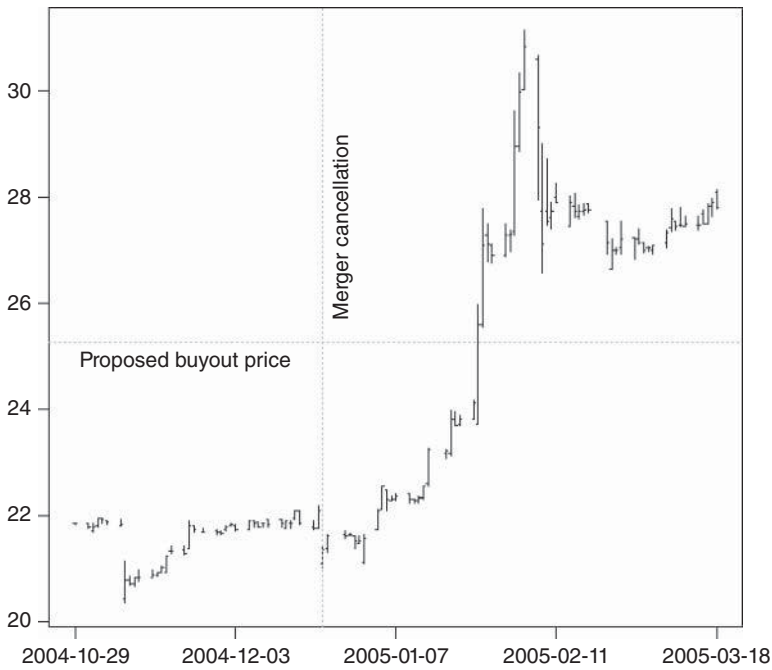


FIGURE 4.1 Stock Price of Unisource after the Collapse of the Merger

In finance, the analysis of losses separates into two dimensions:

1. The probability that a loss will happen.
2. The extent of the losses. Credit analysts refer to this as “severity” or “loss given default.”

Readers may be familiar with this distinction from credit analysts. As we shall see later, there are many analogies between merger arbitrage and credit management. Like credit analysts, arbitrageurs estimate the probability of a merger collapsing and the severity of the loss separately. The two are combined to give the expected loss:

$$E(L) = Pr(L) \times L \quad (4.1)$$

where

- L is the severity of the loss.
- $Pr(L)$ is the probability of suffering a loss.
- $E(L)$ is the expected value of the loss.

The expected loss is also called a probability-weighted loss. It represents the loss that an arbitrageur expects to suffer on average if positions in a large number of identical mergers were taken.

The probability of suffering a loss is just the inverse of the probability of the merger closing. In terms of the probability of success, this can be rewritten as

$$E(L) = (1 - P_{\text{success}}) \times L \quad (4.2)$$

PROBABILITY OF CLOSING

The vast majority of merger transactions are completed without problems. It is my experience that even among the transactions that do run into problems, the eventual completion rate is high.

Academic research has been trying for the past 25 years to examine the probability of successful completion of mergers. Many of these studies are directly related to the returns that can be achieved through merger arbitrage. These studies have identified a number of factors that drive the completion of a merger:

- *Hostile transactions generally have a lower probability of success than friendly transactions.* This comes as no surprise to anyone reading the newspaper headlines.
- *One recurring factor that increases the likelihood of a successful merger closing is the market size of the target.* However, there is no agreement on the direction in which this variable influences the outcome. Early studies show that larger transactions are less likely to close than smaller ones.¹ More recent studies² indicate that large transactions are more likely to fail than smaller ones. This discrepancy between the conclusions of these studies may simply be a reflection of different market environments.
- *The impact of the bid premium is similarly uncertain for the probability of completion.* While it is clear that a larger bid premium will lead to a larger loss if a merger collapses, it is less intuitive to see why a large premium could impact the probability of the merger closing.
- *Tender offers are less likely to close than mergers.*³ Tender offers typically require a participation of 90 percent, whereas mergers can be voted with a 50 or 66²/₃ percent majority, so that the threshold for the latter is easier to reach. In addition, this also could be another manifestation of the size effect, because cash tender offers are smaller on average than stock-for-stock mergers.

- *Index membership increases success.* One study⁴ finds that mergers are more likely to be completed if the buyer is a member of the S&P 500. A likely explanation is that reputational risk matters more for large, well-known companies.
- *The percentage of stock owned by the acquirer affects the outcome.* If the acquirer owns a larger percentage of the target firm prior to the announcement, the merger is more likely to close.

Ben Branch and Taewon Yang⁵ find that 89 percent of all mergers were completed in the period from 1991 to 2000. They find that the type of payment impacts the probability: Collar mergers have the highest success rate with 93 percent, whereas stock-for-stock mergers without collar provisions only come to 88 percent. Cash tender offers are the least successful types of mergers with a completion rate of only 87 percent. In their study regarding mergers of S&P 500 members, Fich and Stefanescu⁶ find failure rates shown in Table 4.1.

As most of these studies rely heavily on data from the 1990s, a model with more recent merger data was built.⁷ For convenience, only cash mergers were considered. Information about mergers for the three years from January 1, 2002, until December 31, 2004, retrieved from Bloomberg consists of 797 transactions announced in that period, of which 648 had closed. After eliminating mergers of questionable data quality, the ultimate data set consisted of 528 cash mergers. No minimum transaction size was imposed, and therefore, the distribution of this dataset is weighted heavily toward small mergers of less than \$50 million. Many studies consider only “investable” mergers above \$50 million. In this model, 468 mergers closed and 60 were terminated, giving a failure rate of 11.5 percent. This is in line with the results of the studies just mentioned.

The probability of success of a merger can be estimated through logistic regressions. This type of regression relates a binary variable, such as the merger closes (1) or fails (0), to continuous variable, such as the size of the firm. Several models have been developed in the literature. Based on the Bloomberg data set of 528 cash mergers, the author developed a logit

TABLE 4.1 Failure Rates of Mergers According to Fich and Stefanescu

	Cash Merger	Stock-for-Stock Merger
In S&P	7.45%	10.29%
Not in S&P	27%	25.7%

Based on analysis by Eliezer M. Fich and Irina Stefanescu, “Expanding the Limits of Merger Arbitrage,” University of North Carolina Working Paper, May 18, 2003.

estimator of the probability of success:

$$\Pr_{\text{success}} = \frac{\exp(2.06 + 0.71 \times \text{DealSize} - 0.31 \times \text{Owned})}{1 + \exp(2.06 + 0.71 \times \text{DealSize} - 0.31 \times \text{Owned})} \quad (4.3)$$

where

DealSize represents the size of the acquisition in \$billions.

Owned is the percentage of the target firm owned by the acquirer prior to the announcement of the transaction, represented as a number between 0 and 1.

The sparse nature of the model illustrates the problem in the estimation of models that can be used in merger arbitrage. Despite the wealth of studies on the completion of mergers, it is difficult to build statistical models to calculate probabilities accurately. Factors determining the likelihood of successful completion vary from transaction to transaction. In statisticians' language, mergers have too many degrees of freedom. The first hurdle to overcome is data collection. Unlike financial variables used in most models, the information relevant to merger arbitrage is only partially quantitative. Some of the factors that are not amenable to incorporation into models are subtleties in the wording of merger agreements, such as material adverse change clauses; in a contested merger, the skill of an acquirer in building alliances; and in the case of transactions challenged on antitrust grounds, the ability of companies to divest divisions and thereby become compliant with antitrust regulations. At best, a statistical model can be used as a starting point, and its results then must be adjusted subjectively.

Arbitrageurs should also bear in mind that the definition of what constitutes a failed merger can vary depending on the context in which one looks at the data. For example, an arbitrageur would consider the bidding war between HP and Dell over 3PAR (Chapter 5) a single merger that was highly profitable. An investment banker, however, would consider this as two transactions of which one failed: one merger between 3PAR and HP, and another between Dell and 3PAR. From the investment banker's point of view, this definition makes sense, as one of the banks would not earn a success fee because its client did not acquire the target. So the arbitrageur will see a 100 percent success rate, while the investment banker will see a 50 percent failure rate. Similarly, if one were to look only at bids, one would note that a total of seven bids for 3PAR were made, of which naturally only the last one was successful. Therefore, arbitrageurs need to be careful and understand exactly the definition underlying statements that claim certain failure or completion rates in mergers and acquisitions.

The remainder of this section discusses a number of factors that frequently lead to the cancellation of mergers. It should be remembered that often the confluence of several problems is necessary to lead to the cancellation of a merger. Buyers have different reasons to try to void a merger from target companies. Separation is more likely to happen when both buyer and target have good reasons to walk away from the merger.

The most important pitfalls that can lead to the cancellation of a merger are discussed in future chapters in great detail. The next sections give an overview of factors that arbitrageurs should be mindful of.

Reverse Merger Arbitrage

A variation of merger arbitrage is to set up the arbitrage in a way that it benefits from a deal collapse when an arbitrageur believes that the probability of such a collapse is very large. In a survey⁸ it was found that 95.24 percent of arbitrageurs engage in such a strategy, which is also referred to as *Chinesing* a merger.

This strategy can be successful not only when a merger collapses, but also when the time frame of a merger is extended. Even if the annualized spread stays constant in an extension, the dollar spread must widen and an arbitrageur will benefit from this widening.

Reverse merger arbitrage is important, as it keeps spreads at levels that reflect risk even if many arbitrageurs pursue an arbitrage strategy and substantial inflows of capital come into merger arbitrage funds. However, as the study by Rohani and Wanzelius discussed in Chapter 3 illustrates it is not easy to generate consistent positive returns with a reverse merger strategy.

Inability to Obtain Financing

In cash transactions, the ability of the buyer to obtain financing is one of the key determinants of a successful completion. This is of particular concern for highly leveraged transactions, such as those involving private equity funds as buyers. Financing is discussed in more detail in Chapter 7.

Changes in Business Conditions

Market, sector, and company risk are not normally associated with market-neutral investment strategies such as merger arbitrage. For merger arbitrage, event risk is the principal risk faced by arbitrageurs, namely the risk that the transaction will not occur. However, it would be naive to assume that none of the risks associated with traditional investment styles apply to arbitrage. These traditional forms of investment risk are second-order effects:

- The first-order risk is the event risk, the risk that the transaction fails.
- Market, sector, and company risk are second-order risks that can contribute to event risk.

Event risk is not completely independent of market movements. For large drops in the stock market, the risk of failure increases if the acquirer thinks it overpaid. For large increases in the stock price, shareholders may vote against the deal if they think they are not receiving a high enough price.

A significant deterioration in business climate is referred to as a *material adverse change* (MAC) in legal terms. Whether a buyer can walk away from a merger or not depends on the exact provisions of the merger agreement. MAC clauses have become more restrictive over time, and it is becoming increasingly difficult for buyers to invoke them. Doing so will inevitably lead to litigation, which has a negative effect on the share prices of the buyer and the target. The current status of MAC jurisprudence is driven by the IBP/Tyson Food decision in 2001.⁹ Tyson Foods had entered into a merger agreement to acquire IBP for \$30 per share after winning a bidding war with Smithfield Foods but tried to cancel the acquisition when IBP reported poor results for the fourth quarter of 2000 as a result of harsh winter conditions. Tyson claimed that IBP's business had suffered a material adverse change. The judge in the case ruled that one bad quarter does not constitute a material adverse change and that IBP's business would have to be affected permanently in order to constitute MAC.

IBP was awarded "specific performance" by the court. This means that Tyson was forced to implement the merger agreement and complete the acquisition. It was the best outcome that IBP shareholders could have hoped for, and the merger closed in the middle of 2001.

MAC clauses and specific performance were tested in court during the financial crisis of 2008–2009. The most notorious incident was the failure of the acquisition of shoe retailer Genesco by its competitor Finish Line, a highly leveraged transaction. Superficially, Genesco suffered a material adverse change when its quarterly earnings declined, probably in relation to changes in consumer spending as the housing crisis unfolded. Finish Line claimed a material adverse change and sought to discharge its obligation to acquire Genesco by suing in Tennessee. From an arbitrageur's point of view, this was a challenge as no material adverse change case had ever been tried in that state. Although most courts habitually look to Delaware for guidance, judges will first take their own state's traditions into account. The Genesco case was complicated further when a parallel lawsuit was filed by Finish Line's banker that alleged fraud by Genesco. It claimed that Genesco had withheld critical financial information from the lender. This lawsuit was eventually dismissed—however, the bank that had filed it gained a few

months in critical times and thus avoided taking potential writedowns worth several billion dollars on the high-yield debt that it had committed to providing. In the Tennessee action the judge ruled that although Genesco had suffered a material adverse change, this was excluded from the merger agreement and Finish Line was required to proceed with the purchase.

The ultimate outcome was a settlement between all parties. Although Genesco did not get acquired and arbitrageurs who held on to the position suffered a permanent loss, shareholders overall did well as Genesco was awarded equity in Finish Line. Effectively, the target ended up owning a slice of the buyer—a highly unusual outcome in a merger, to say the least.

Unfortunately, the remedy of specific performance is not available to shareholders in all states. While Delaware courts can impose specific performance, New York courts will not do so. Instead, they will force the buyer, should it lose the case, to pay monetary damages to the target rather than complete the merger. Although these damages will increase the value of the target, it is uncertain whether this will be sufficient to offset losses suffered by target's shareholders.

Today, lawyers write MAC clauses to exclude certain events that affect the economy in general but do not affect the target firm disproportionately. As a result, it is difficult for an acquirer who experiences buyers' remorse to back out of a transaction solely on the basis of MAC. Other loopholes must be invoked instead.

In the United Kingdom, MAC clauses can be a condition on which an offer is conditional. The main difference to the United States is that no exceptions to a material adverse change are allowed. As a result, they are very similar from one merger to another. A key ruling by the Panel on the question of MAC clauses came in the year 2001 when WPP had tried to acquire Tempus Group but attempted to cancel the merger due to the economic slowdown following the September 11 attacks and the associated deterioration in the advertising industry. The Panel ruled that

... meeting this test requires an adverse change of very considerable significance striking at the heart of the purpose of the transaction in question, analogous ... to something that would justify frustration of a legal contract.

Specifically, the decline in advertising had to be distinguishable from the overall economic slowdown, which was not the case. In 2004, the Panel clarified its stance on the “frustration” of contract, whose standard is in line with general contract law. Since then, “frustration” is not necessarily required, but the standard applied to a MAC should be very high.

Public Intervention

Fortunately for arbitrageurs, politicians and the general public rarely show much interest in merger activity. Most concerns that arise are related to monopoly pricing power and affect antitrust issues. In some instances, however, public opposition to mergers falls outside of the narrow scope of an antitrust review.

However, in recent years cross-border mergers have become politicized. The acquisition by Chinese buyers in particular has attracted unwelcome political and media attention.

Within the U.S. one type of transaction particularly susceptible to political intervention is utility mergers. The long time period required to close such a merger is partly a reflection of the involvement of multiple state regulators. However, the number of regulators involved does not yet explain the low success rate of such mergers. After all, bank mergers also often involve several states and nevertheless have a high completion rate. Instead, the monopoly pricing power for the indispensable services provided by the utility triggers added interest by state regulators, the general public, and hence also politicians.

The federal government tends to take a hands-off approach to mergers with the exception of some high-profile areas (media, airlines, national security), so that the field of government interference is left wide open to state regulators. States always get involved in mergers of public utilities and sometimes in mergers of state-chartered banks. Utilities are a particular minefield because politicians are sensitive to allegations that any future price increases in rates are due to the state's failure to block a merger, potentially ending the careers of many local politicians.

In Europe, many large-scale mergers face popular uproar, and some aspect of a transaction is frequently scandalized. However, trade union representatives frequently have participated in the approval of a merger through their board representatives. This tends to assuage the public outrage.

Public intervention has become increasingly a problem in recent years, even in areas that have little exposure to national security. For example, in 2013 the Australian government blocked the proposed acquisition of bulk grain exporter GrainCorp by Archer Daniels Midland of the United States. Clearly, grain exports have no national security implications. However, the Australian government had made this merger an electoral issue during the election campaign a few months earlier in order to win the support of the farming lobby. While blocking this transaction had no military or other security implications, Australian Treasurer Joe Hockey of the ruling Nationals party stressed the "national interest." The interests of the farming lobby cost shareholders a 22 percent drop in the share price on the day of the deal's collapse.

At times, intervention of politicians can assume farcical traits. After the 2014 announcement of a merger between Burger King and Tim Horton's of Canada, concerns arose over potential intervention of Canadian politicians who played on fears that their voters' favorite breakfast restaurant might be taken over by a U.S. chain that was controlled by Brazilian investors.

Relative Size of Buyer and Target

A merger is more likely to close if the buyer is much larger in size than the target. This is discussed in more detail in later.

Antitrust Problems

Antitrust problems are primarily concerns for strategic mergers but may become more prevalent in leveraged buyouts as large private equity firms acquire an increasingly large share of businesses. Antitrust issues are discussed in Chapter 8.

Shareholder Opposition

It happens frequently that long-term shareholders of a target company oppose a merger as providing too little value.

Similarly, shareholders of a buyer may also oppose an acquisition if they feel that the company overpaid.

Successful shareholder opposition is relatively rare, as it can be difficult to oppose a transaction if the premium paid relative to the last trading price is high. Most shareholders will take the certain money rather than live with the uncertainty of having the firm continue to be run by managers who may not have added much value. The lack of value addition is often the principal reason why a company becomes a takeover target in the first place.

Shareholder opposition is often a fruitless exercise, but it can wreak havoc on an arbitrageur's position. It takes a very well organized shareholder campaign to derail a merger. The typical reasoning of a shareholder is the argument that the company is worth more than what shareholders will receive in the merger, and so the firm should be sold to another buyer at a higher price. However, absent other buyers with a compelling higher offer, other shareholders have no incentive to follow this reasoning. In fact, once the merger was announced, the shareholder base has begun to change: Long-term shareholders sell their shares to arbitrageurs, who provide those shareholders with the liquidity they need. The arbitrageurs, in turn, are interested in a prompt closing of the merger rather than a lengthy search process. Even worse for an arbitrageur is a collapse of the deal without a

competing higher offer; this situation leaves the arbitrageur open to market risk. In a stock-for-stock merger, this event can lead to the worst-case scenario where the target drops and the acquirer rises in a short squeeze due to the sudden simultaneous unwinding of arbitrage positions. The mere threat of a cancellation of a merger is often sufficient to induce arbitrageurs to reduce their exposure to the deal, which will lead to a widening of the spread and a mark-to-market loss for existing arbitrage positions. If a shareholder wants to mount a successful campaign to undo a merger, it must be done in a way that comforts arbitrageurs that they will not sit on a losing position at risk of market movements if the deal collapses.

It is easier for shareholders to oppose mergers than tender offers. A merger has a long time frame, giving activists a better opportunity to convince shareholders to vote against. In a tender offer, with a much shorter time frame, shareholders may have tendered their shares already by the time they receive word of opposition. In addition, they will get the consideration much sooner from the tender offer than any better deal in the future. Each shareholder faces a prisoner's dilemma: If all shareholders oppose the transaction, they may eventually be better off. However, a shareholder not tendering must wait until the completion of the second step, the short-form merger, to get paid. Because most investors, professional or retail, have high subjective discount rates, the immediate payoff in a tender offer is much more attractive than the same consideration after the second step or even hope for a better transaction down the road. Two transactions illustrate the difference.

In recent years, numerous examples of shareholder opposition to mergers could be witnessed. One of the most prominent cases was the failed attempt by shareholder activist Carl Icahn to block the \$16 billion buy-out of struggling computer manufacturer Dell Inc. by its founder Michael Dell and private equity firm Silver Lake. Several investors were reported to consider the initial bid of \$13.65 in early February 2013 as being too low. Southeastern Asset Management subsequently disclosed an 8.5 percent stake and announced its intention to vote against the merger. T Rowe Price, a large institutional holder, also opposed the acquisition. About one month after the announcement of the acquisition, Carl Icahn announced a 6 percent ownership stake and advocated a leveraged recapitalization in lieu of the acquisition. Under his proposal, Dell would have paid a special dividend of \$12 per share and would have remained a public company. Subsequently, he proposed to acquire the firm for \$14 in cash. Eventually, Michael Dell and the Silver Lake increased the bid to \$13.65 in cash plus a dividend of \$0.13. Although Icahn threatened to perfect appraisal rights—an avenue he did not pursue in the end—the transaction closed on the revised terms after about 7 months.

Icahn's agitation at Dell resembles the fight several years earlier in the acquisition of VistaCare, where healthcare hedge fund Accipiter Capital Management opposed the acquisition by VistaCare's competitor Odyssey HealthCare. Accipiter encouraged shareholders not to tender their shares and to seek appraisal rights. Accipiter had a solid case to make: VistaCare was in the middle of a turnaround that was beginning to show fruit. This is an uncommon event in itself. Many companies appear to drift from one turnaround to another without ever having any success. Margins were beginning to improve. In addition, the earnings yield of the firm was depressed artificially because the \$8.60 stock had a cash balance of \$1.40 per share. VistaCare's gross margins were almost half those of Odyssey. Nevertheless, 84 percent of shareholders tendered their shares in Odyssey's offer during the first offer period, which lasted almost one month. Odyssey extended the tender period for four more days, after which it had obtained 94 percent of all shares and was able to close the merger.

Even long proxy fights are insufficient for shareholders to block some mergers. When SCPIE, a California medical insurance firm, was acquired by The Doctors' Company, long-term shareholder Stilwell attempted to block this transaction in favor of a higher bid by one of SCPIE's competitors, American Physicians Capital (ACAP). ACAP had also been bidding to acquire SCPIE and offered \$28 in stock, whereas The Doctors Company, as a private firm, offered \$28 in cash. Much of the public disagreement between Stilwell and the SCPIE's board concerns the question whether ACAP's bid was better or not. The board points to the certain value of cash and the absence of a firm bid from ACAP. However, ACAP was prevented from making a bid under a standstill agreement that it had previously signed in order to conduct due diligence. Unfortunately, Stilwell's many shareholder communications never made clear where the problem was, and SCPIE was eventually sold to The Doctors' Company.

Outside the United States, shareholder activism is less frequent and, when it occurs, less vocal. One problem is, particularly in Europe, that few channels exist for activists to communicate with shareholders. Unlike in the United States, depositories may not always be obligated to forward communications from activists to beneficial holders of shares. Moreover, many companies have anchor investors, a few large institutional holders. These key investors often determine the direction of a company and the outcome of shareholder votes. Therefore, activists opposed to a sale may not feel a need to go public and may simply discuss strategy with the core investors directly. The result is that shareholder opposition may occur, but if it does it remains behind closed doors, making it difficult for arbitrageurs who rely on publicly available information to take investment decisions.

Nevertheless, a few examples exist where public opposition to takeovers has had some success. One is the purchase of Danish food

additive manufacturer Danisco A/S by E. I. du Pont de Nemours in 2011. The tender offer was opposed by the association of Danish retail investors as insufficient. However, in a pattern by now familiar to the reader, du Pont increased its tender price marginally from DKK 665 to DKK 700 and thereby obtained 92 percent of the shares, enough to complete the takeover. It was the rare absence of anchor investors combined with the widespread and fragmented ownership, atypical in Europe, that allowed the opposition to prevail. Nevertheless, there are a few instances in Europe where fragmented ownership can help activists pushing for an increase.

An even more favorable outcome for shareholders was the 2013–2015 acquisition of Club Mediterranée SA by a consortium that consisted of management and Fosun International with the backing of private equity firm AXA Private Equity. The initial 17-euro bid for a minimum of 50.01 percent of the shares was not met with enthusiasm by shareholders even after the price was increased to €17.50. The investor group had commitments of 24.87 percent of all outstanding shares. At that point, an investor filed a court action challenging the independence of the valuation expert who had pronounced the acquisition price as fair. After a seven-month delay, as the court decision approached, investors began to announce publicly that they would not tender. One group, Strategic Holdings of Italian financier and turnaround expert Andrea Bonomi, hoped to enter “constructive talks with the management of Club Med to the benefit of the company” and began to build a stake: 5 percent initially, followed quickly by a disclosure of a 10.07 percent position with an announcement that it sought to acquire 15 to 20 percent. The situation for the company became so desperate that it had to remind one of its Italian investors, Edizione, controlled by the Benetton family, of its irrevocable commitment to tender, and filed a lawsuit to compel Edizione to make good on its irrevocable commitment and tender its 2.2 percent stake. The Paris commercial court dismissed this lawsuit. In June 2014, Bonomi announced a €21 acquisition proposal through another of his holdings, Investindustrial Development SA. Club Med’s management promptly recommended this offer. Ten weeks later, Fosun returned with a slightly higher €21 bid, which then became the recommended offer, only to be outbid two months later by Bonomi with a €23 bid. Fosun promptly countered with €23.50, followed by another counterbid for €24. The winner of the auction was Fosun with €24.60. Shareholders realized an upside of almost 50 percent as a result of persistent opposition.

The acquisition of Pinnacle by Quest Resources is one of the rare examples where shareholder activism can succeed in derailing a merger. However, it succeeded only against a backdrop of unhappy investors. The effects of this merger gone bad are discussed later in this chapter.

Management Opposition

Hostile merger transactions are hostile by definition because the management of the target company is opposed to the merger. The nature of hostile transactions has changed significantly in the last decade.

Hostile mergers became a widespread phenomenon in the 1980s when corporate raiders sought to undo the effects of the conglomerate boom of the preceding decade. At the time, it was the raiders themselves who sought to acquire a company against the wishes of management. Managers of the target firms frequently were opposed to these buyouts because they would have lost their lucrative jobs. Shareholders, however, would have benefited from a sale of the company at a premium. One of the effects of management opposition was the justification of stock options by the buyout argument: If managers will gain wealth from a premium offered for shares by a buyer, their interests are more aligned with those of shareholders. An analogous argument can be made to justify golden parachutes: They compensate managers for the loss of their employment and make them less likely to oppose transactions that are favorable for shareholders.

Today, buyouts have changed; raiders rarely acquire firms anymore. Modern raiders are activist shareholders who agitate to get a company to sell itself, but the activists are not normally the ones who want to buy the firm.

An interesting and ultimately successful attempt to block a sale of itself was implemented by Sovereign Bancorp. Hedge fund Relational Investors had agitated to get Sovereign to sell itself. An opportunity to frustrate shareholders' push for a sale came in 2005, when Sovereign's management convinced Spanish bank Grupo Santander to acquire 19.8 percent of Sovereign through the issue of new shares and used the proceeds from the investment to purchase Independence Community Bank. Santander was seen as a management-friendly shareholder that was unlikely to sell out to any potential acquirer. In the words of the chief executive officer of Ryan Beck & Co., the firm that advised Sovereign: "Obviously, some shareholders don't like the Santander transaction, because it effectively means Sovereign won't be selling out in the short term."¹⁰ Santander took on the role of a "white knight" typical of takeover defenses (see Chapter 8). Unlike in most such scenarios, however, Sovereign continued to exist as an independent bank. Usually a white knight takes complete control of the target. Therefore, the Santander/Sovereign merger stands out as a particularly shareholder-unfriendly management coup. Santander acquired the remainder of Sovereign during the banking crisis of 2008 at a much-reduced price compared to the value of Sovereign in 2005.

Due Diligence and Fraud

In rare instances, fraud is discovered after the signing of a merger agreement. Typically, fraud is a good enough reason to call off a deal.

After the signing of the merger agreement between Enron and Dynegy, it became known during Dynegy's due diligence process that Enron had engaged in a number of fraudulent activities. Readers will be familiar with the Enron saga given the press coverage it received at the time. The attempt by Dynegy to acquire Enron was only one short episode in the collapse. Dynegy had speculated that Enron would not collapse and that it might be able to acquire a valuable business that had been battered excessively. Therefore, Dynegy bid \$9.5 billion in cash and stock for Enron. Dynegy had completed due diligence prior to signing the merger agreement but decided to conduct additional due diligence after the announcement of the transaction. Enron's situation continued to deteriorate, and Dynegy attempted to renegotiate the price. Eventually, the true state of Enron's business began to emerge, and credit agencies downgraded Enron, thereby triggering immediate repayment of much of its debt. Dynegy used this to call a "material adverse effect" and exited the merger agreement. The spread on this transaction had been unusually wide, which could have been an indication either that few in the market believed that the transaction was likely to be completed or, more likely, that the downside risk in the event of a collapse of the deal was a complete loss on the long position in Enron. It turned out that the latter was the case for any arbitrageur who attempted to profit from this transaction.

As an aside, Dynegy had provided Enron with emergency funding in the amount of \$1.5 billion to prevent an immediate cash crunch. Fortunately, Dynegy had this loan secured by pipeline assets, which it recovered in the bankruptcy. It is common to see emergency funding for troubled businesses by acquirers as soon as a merger is announced. Absent fraud as in Enron, these transactions tend to be very likely to be completed, because a collapse of the target can make it impossible for the acquirer to retrieve assets that secure the funding. In fact, the loan can even be subordinated to prior debt under certain circumstances during bankruptcy. Partly for this reason, Dynegy settled by paying Enron \$25 million after lengthy litigation over the pipeline assets.

Chinese companies are at particular risk of being impacted by fraud risk. This is discussed in Chapter 5.

Breakup Fees

Merger agreements contain breakup fees that the target company has to pay the buyer if it wants to cancel the merger. Less common are reverse-breakup fees, which the buyer has to pay the target company if it decides not to proceed with the transaction. Two types of breakup fees can be distinguished:

1. *Target breakup fees.* These are the fees that the target firm must pay to the buyer if it cancels the merger. Triggers for the payment of breakup fees can be a negative shareholder vote, a change of mind by the board

of directors, or the acceptance of a better proposal from another buyer. Generally, when the term *breakup fee* is used generically without further qualification, it refers to target breakup fees.

2. *Buyer breakup fees, more commonly known as reverse breakup fees.* These fees are less common and are paid by the acquirer if it changes its mind. Reasons could be the unavailability of financing or negative shareholder votes.

The rationale behind break fees is the idea that a buyer has expended some effort into investigating the target firm, which it does not want to go to waste. However, an equally valid argument can be made that in the normal course of business not every initiative can be completed successfully, and M&A activity is no different than failed product releases or other mishaps.

The extent to which breakup fees are allowed varies between jurisdictions. In the U.S. typical values for breakup fees are between 3 and 7 percent of the value of the merger. For smaller transactions, breakup fees as a larger percentage of the deal value are the rule. Figure 4.2 shows average target

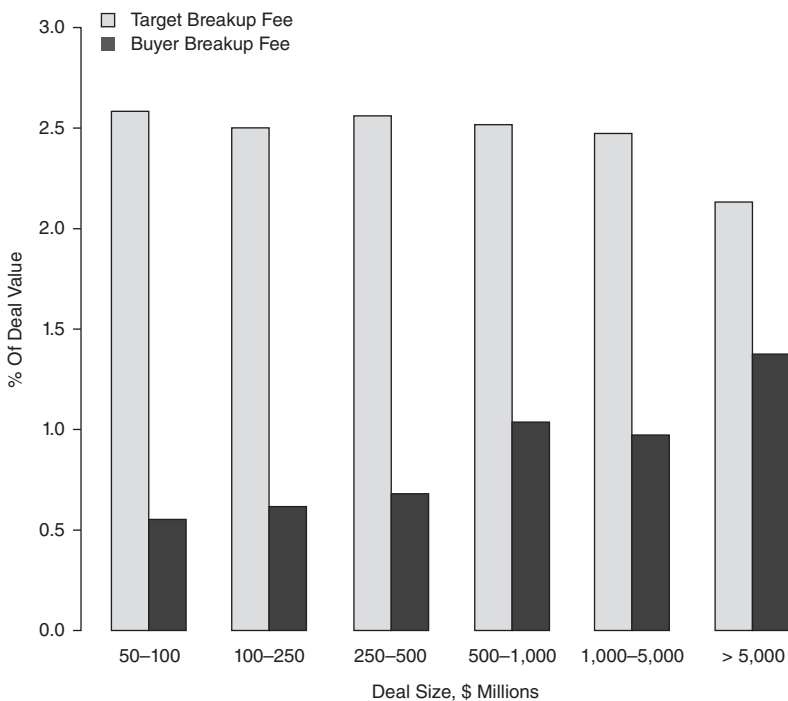


FIGURE 4.2 Typical Breakup Fees for Targets of Different Sizes across All Transactions

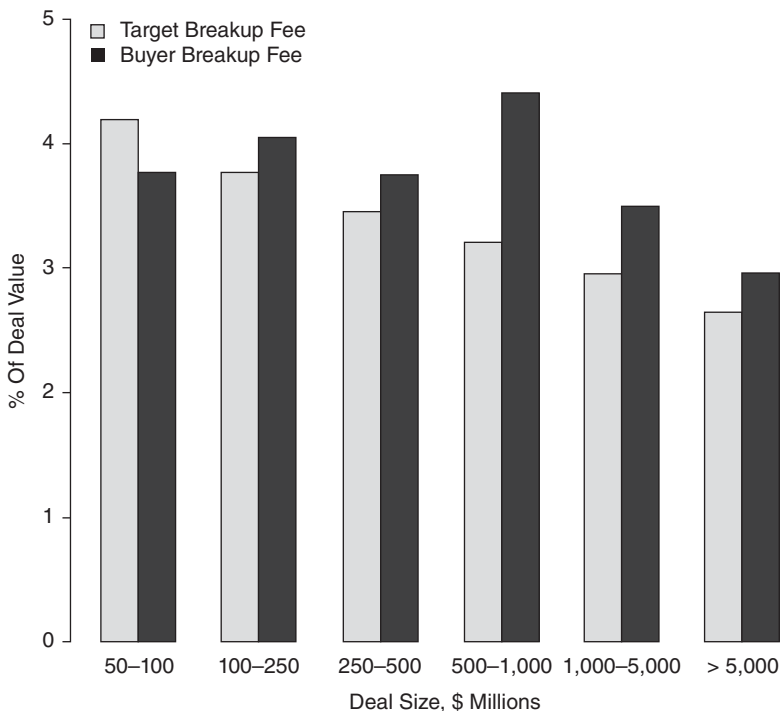


FIGURE 4.3 Typical Breakup Fees for Targets of Different Sizes Only for Transactions That Have Breakup Fees

and buyer breakup fees for mergers of different sizes across all transactions, including those that have no breakup fees. However, when only transactions with breakup fees are considered, smaller transactions indeed have higher breakup fees as a percentage of the transaction value, as can be seen in Figure 4.3. The prevalence of breakup fees has increased over the last decade. By the middle of 2013, over 90 percent of all announced mergers had target breakup fees. For smaller transactions of less than \$500 million equity value, almost one-third had buyer breakup fees, whereas they were present in more than half of all larger mergers (see Figure 4.4).

Arbitrageurs must read the merger agreement carefully to understand the circumstances under which breakup fees are payable. In some instances, staggered breakup fees are imposed, so that a higher or lower amount has to be paid depending on the reason for the cancellation of the merger. Breakup fees sometimes carry other monikers, such as in the case of the failed acquisition of movie and music distributor Image Entertainment by producer and financier David Bergstein. In this buyout, the buyer breakup fee was referred

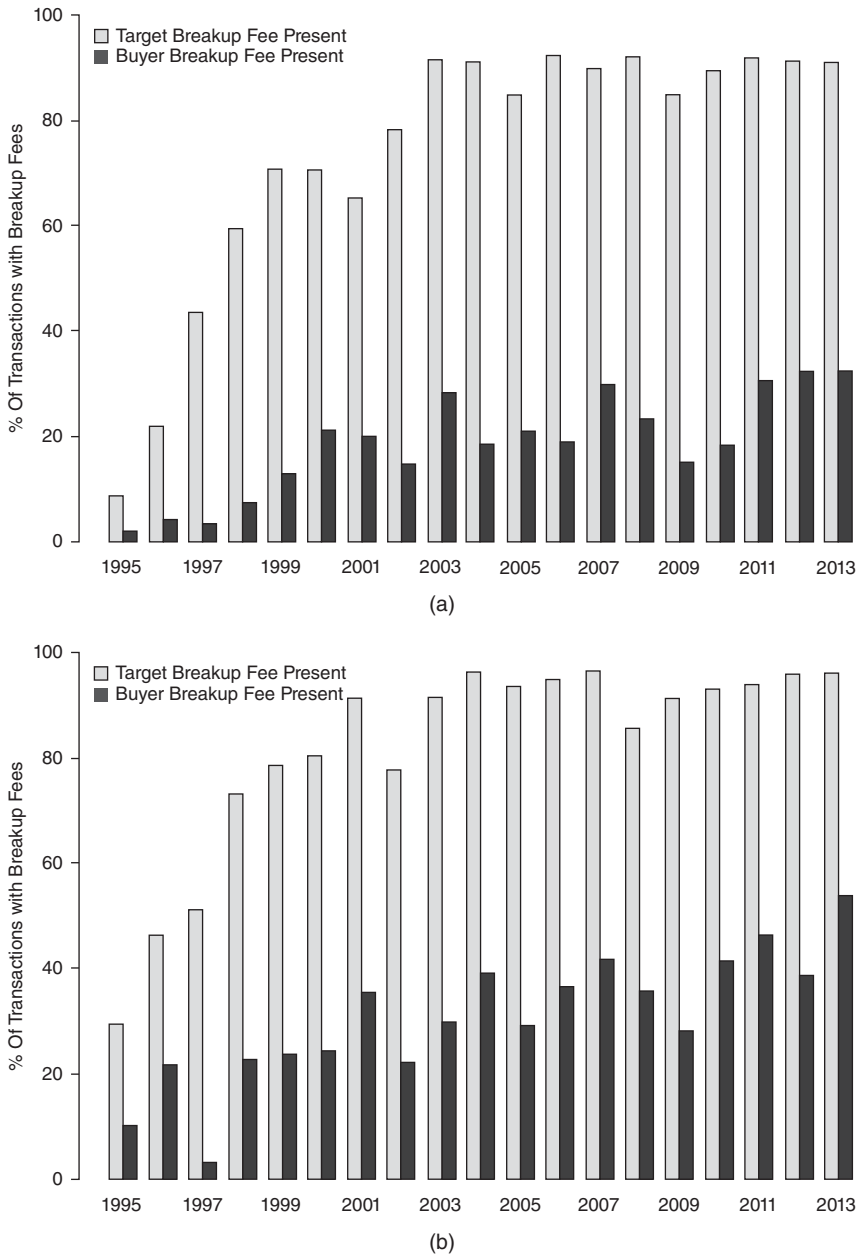


FIGURE 4.4 Percentage of Transactions with Breakup Fees. (a) \$50–500 Million. (b) >\$500 Million

to as a *business interruption fee*. Breakup fees are generally not payable when a merger agreement is terminated due to a material adverse effect. Any other exceptions are spelled out in the merger agreement.

Breakup fees make the consummation of a merger more likely. A drawback is that if another buyer wanted to make a bid for the target firm, it would incur the breakup fee as a cost. Although the breakup fee is first an obligation of the target firm, no firm will enter into a new agreement unless the other buyer is willing to shoulder the fee. Otherwise, in a worst-case scenario, the second merger could collapse, and the target firm may find itself without a merger but with the obligation to pay the breakup fee.

During the financial crisis of 2007–2008, a number of leveraged acquisitions by private equity funds were canceled. Transactions involving private equity firms normally have not had reverse breakup fees in the past. One well-known case is that of the acquisition of student loan provider Sallie Mae by private equity firm J. C. Flowers. Sallie Mae was facing potential changes to its regulatory environment. When credit markets worsened and it became more difficult for J. C. Flowers to borrow the funds needed to complete the acquisition, the government adopted simultaneously regulatory changes that were different from those proposed at the time of the signing of the agreement. J. C. Flowers sought to cancel the agreement under its MAC clause. Sallie Mae argued that no material adverse change had taken place and sued J. C. Flowers for the breakup fee: \$900 million. Sallie Mae had to drop the lawsuit against Flowers when it needed funding for its business and the lenders made settlement of the litigation a condition to providing the loans. If this breakup fee had been paid, it would have set a record unlikely to be overtaken for quite some time.

As Figure 4.4 demonstrates, the episode of 2007–2008 represents a turning point after which buyer breakup fees became much more prevalent.

The data in the Mergerstat database show the impact of breakup fees on the likelihood of the closing of a merger very clearly. For mergers above \$500 million, completed deals have breakup fees that are higher than those of canceled mergers. Buyer breakup fees have significantly lower averages of 3.6 percent for all deals compared to 2.6 percent for canceled deals (see Table 4.2(a) and (b)). The data suggest that breakup fees do indeed act as a deterrent to deal cancellations.

A large difference exists in average breakup fees between completed and canceled transactions. It is due mainly to the absence of breakup fees in many canceled deals. For those deals that have target breakup fees, their averages are almost identical for successful and canceled deals: 3.55 percent versus 3.56 percent in the case of target breakup fees for small and 2.79 versus 2.56 percent for large transactions. However, the difference becomes significant for buyer breakup fees in larger mergers, where the difference amounts to

TABLE 4.2(a) Average Breakup Fees for Completed and Canceled U.S. Mergers with an Announcement Value between \$50 and \$500 Million

Industry	Target Breakup Fees		Buyer Breakup Fees	
	All Deals (%)	Canceled Deals (%)	All Deals (%)	Canceled Deals (%)
Commercial Services	3.8	3.1	4.6	4.1
Communications	2.7	2.6	3.1	n/a
Consumer Durables	3.4	2.9	7.5	2.2
Consumer Non-Durables	3.2	1.8	4.0	n/a
Consumer Services	3.2	2.3	2.8	3.1
Distribution Services	3.9	2.2	3.5	5.0
Electronic Technology	4.3	4.7	4.7	4.9
Energy Minerals	3.1	2.0	3.5	3.8
Finance	4.0	4.2	3.1	3.5
Health Services	3.9	3.8	5.6	1.5
Health Technology	4.0	4.4	4.6	9.4
Industrial Services	3.5	1.9	3.3	1.5
Miscellaneous	3.0	3.1	n/a	n/a
Non-Energy Minerals	3.6	2.8	2.5	2.7
Process Industries	2.9	1.7	3.3	1.8
Producer Manufacturing	3.6	3.1	3.8	n/a
Retail Trade	3.4	3.1	5.4	3.2
Technology Services	4.6	4.9	4.4	5.4
Transportation	3.4	6.3	3.8	10.2
Utilities	3.5	10.4	2.3	n/a
Overall Average	3.6	3.6	4	4.2

Source: Analysis based on Mergerstat data.

a whole percentage point: 3.6 versus 2.58 percent. This finding suggests that the presence of breakup fees is a much stronger indicator of management determination to close the deal than their higher or lower level. Managers of target firms should insist in their negotiations on a buyer breakup fee or face a higher chance of a deal collapse.

Over the last two decades, average breakup fees have increased significantly, as the evolution of average target and buyer breakup fees depicted in Figure 4.6 demonstrates. The increase of buyer breakup fees is particularly striking. Much of the increase is driven by the larger percentage of mergers that contain breakup fee clauses, as can be seen in Figure 4.5. It shows that target boards are seeking some recourse from the buyer in case the deal falls through.

Termination fees in Canadian mergers have levels that are generally comparable to those in the United States. However, a smaller proportion

TABLE 4.2(b) Average Breakup Fees for Completed and Canceled U.S. Mergers with an Announcement Value of More Than \$500 Million

Industry	Target Breakup Fees		Buyer Breakup Fees	
	All Deals (%)	Canceled Deals (%)	All Deals (%)	Canceled Deals (%)
Commercial Services	3.2	2.2	8.3	1.5
Communications	3.5	n/a	3.2	n/a
Consumer Durables	3.5	2.4	4.5	3.7
Consumer Non-Durables	2.6	1.9	2.6	2.0
Consumer Services	2.9	1.9	3.2	3.7
Distribution Services	2.2	2.4	2.2	1.8
Electronic Technology	2.6	3.9	2.9	2.2
Energy Minerals	3.3	2.7	3.4	2.5
Finance	1.8	4.0	2.6	3.7
Health Services	2.6	2.7	4.1	2.0
Health Technology	2.7	3.1	2.7	2.2
Industrial Services	2.6	3.4	3.1	3.4
Non-Energy Minerals	2.7	2.5	2.9	2.5
Process Industries	2.8	2.1	3.7	2.2
Producer Manufacturing	2.5	2.2	4.3	n/a
Retail Trade	3.4	2.1	4.2	3.2
Technology Services	2.6	3.3	3.2	3.6
Transportation	2.7	1.6	2.9	1.1
Utilities	3.0	1.7	4.7	2.7
Overall Average	2.8	2.6	3.6	2.6

Source: Analysis based on Mergerstat data.

of merger agreements contain such provisions. Only about half of Canadian mergers have target break fees, and fewer than a quarter have reverse termination fees (Figure 4.7).

The U.K. Takeover Code has some of the strictest limitations on the use of *break fees*, as they are called in the United Kingdom. The U.K. Takeover Code will be discussed in more detail in Chapter 8. For now, it is sufficient to state that U.K.-listed companies are subject to the provision of the Takeover Code. Until the reform of the Takeover Code effective in the year 2011, U.K. mergers target break fees occurred regularly, albeit in a smaller percentage of mergers than in the United States or Canada. With the 2011 reform, break fees were banned under Rule 21.2(a) in general, but predictably, the Panel will permit exceptions. A break fee of up to 1 percent is allowed in contested situations where the board is looking for competing buyers (a white knight), or after the completion of a formal sales process with the preferred bidder.

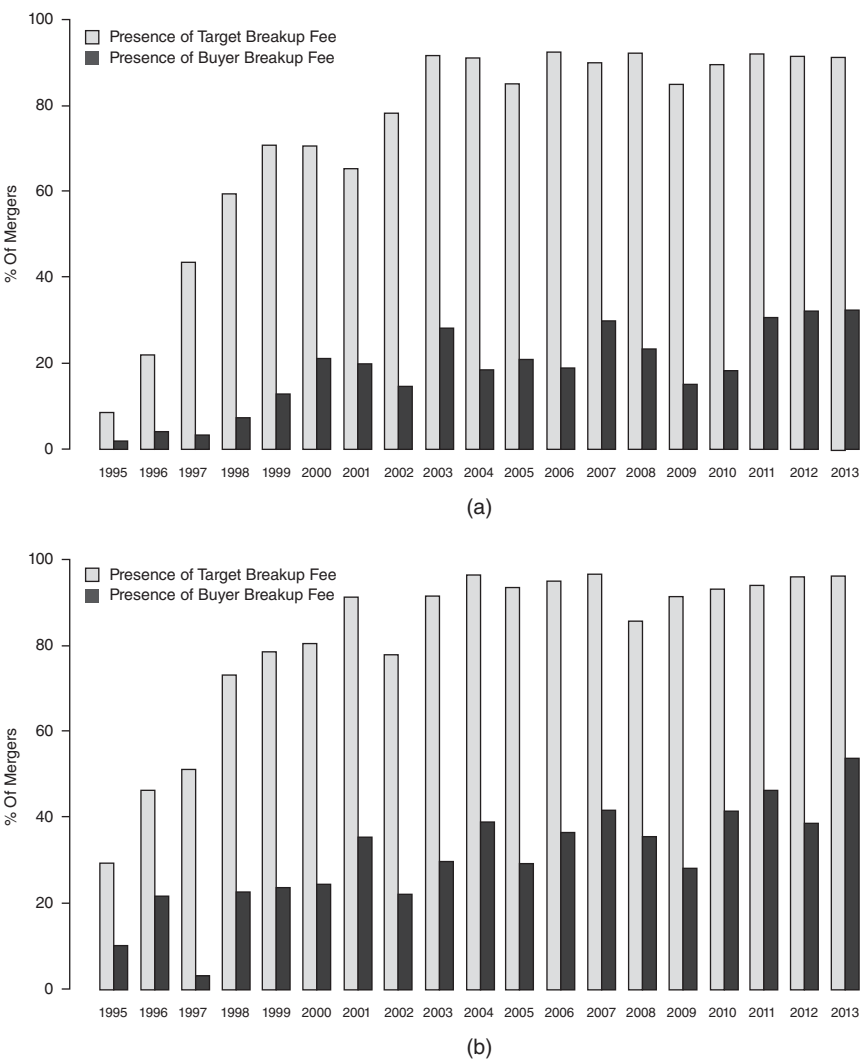


FIGURE 4.5 Prevalence of Breakup Fees. Percentage of Transactions That Contain Breakup Fees for (a) U.S. Mergers with an Announcement Value between \$50 and \$500 Million (b) Announcement Value of More Than \$500 Million

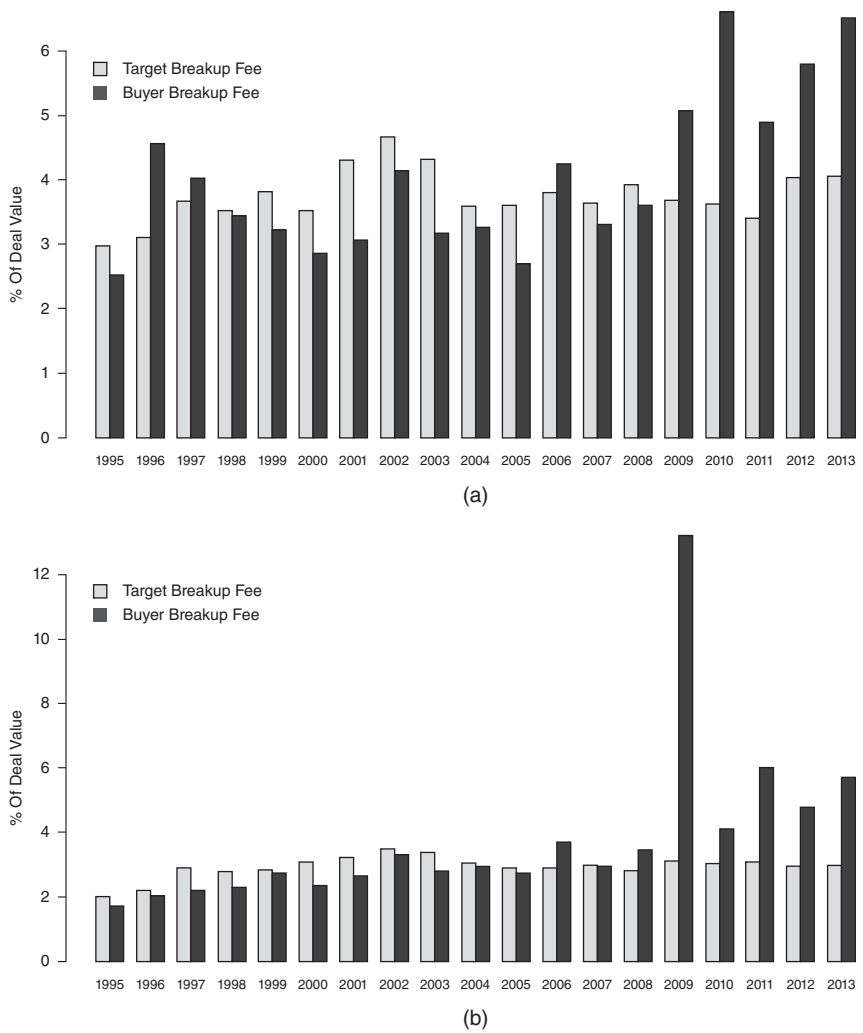


FIGURE 4.6 Evolution of Breakup Fees for (a) U.S. Mergers with an Announcement Value between \$50 and \$500 Million (b) Announcement Value of More Than \$500 Million

The intent is to give comfort to a white knight to enter into a bidding contest. For this reason, break fees are sometimes referred to as inducement fees. The break in prevalence of break fees following the reform of the Takeover Code is visible clearly in Figure 4.8. The level of break fees in the United Kingdom is shown in Figure 4.8 (a), and the percentage of transactions that are subject to break fee in Figure 4.8 (b). In contrast to the situation in North America, several years had not a single U.K. merger with buyer break fees.

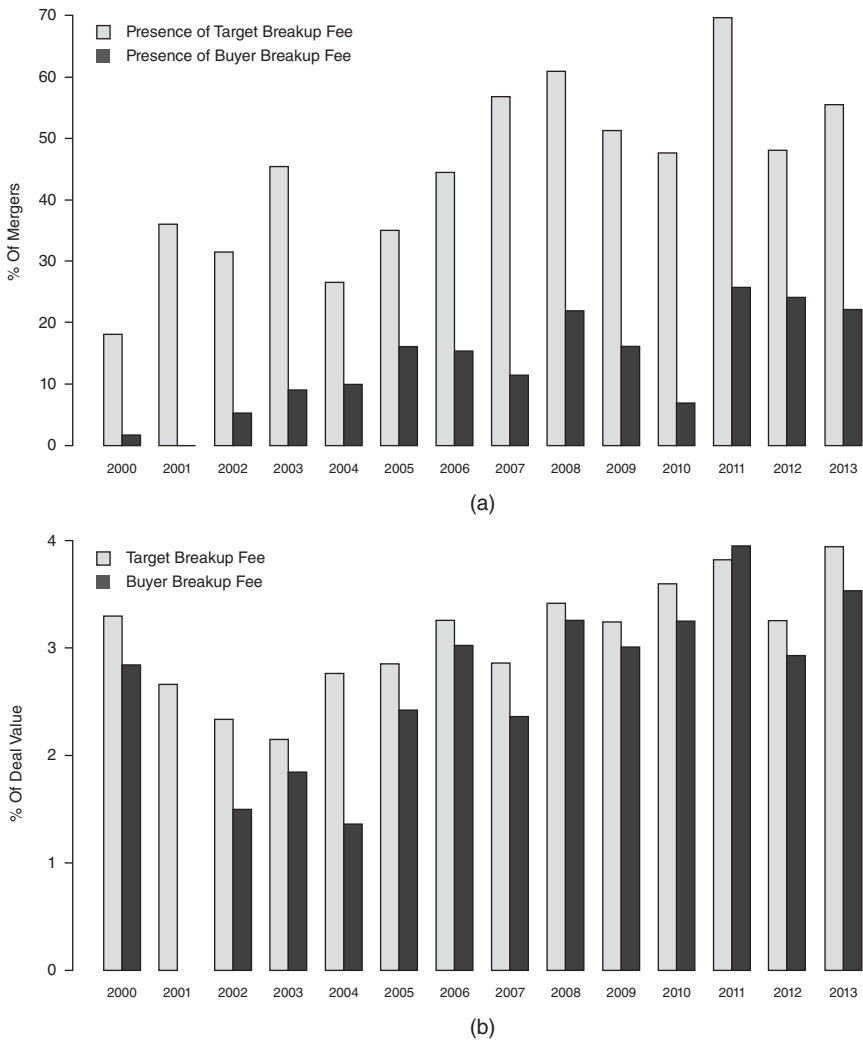


FIGURE 4.7 Canadian Breakup Fees. (a) Prevalence of Breakup Fees (b) Level of Breakup Fees

The wording of the break fee agreement in the offer by Shell for Cove Energy plc is shown in Exhibit 4.1 and demonstrates the contested circumstances under which the agreement was concluded and due to which a break fee can be permitted. Cove was subject to a hostile bid by Thailand's PTTEP and approached Shell as a white knight. The break fee was an inducement to Shell to assume this role. However, eventually Cove was acquired by PTTEP.

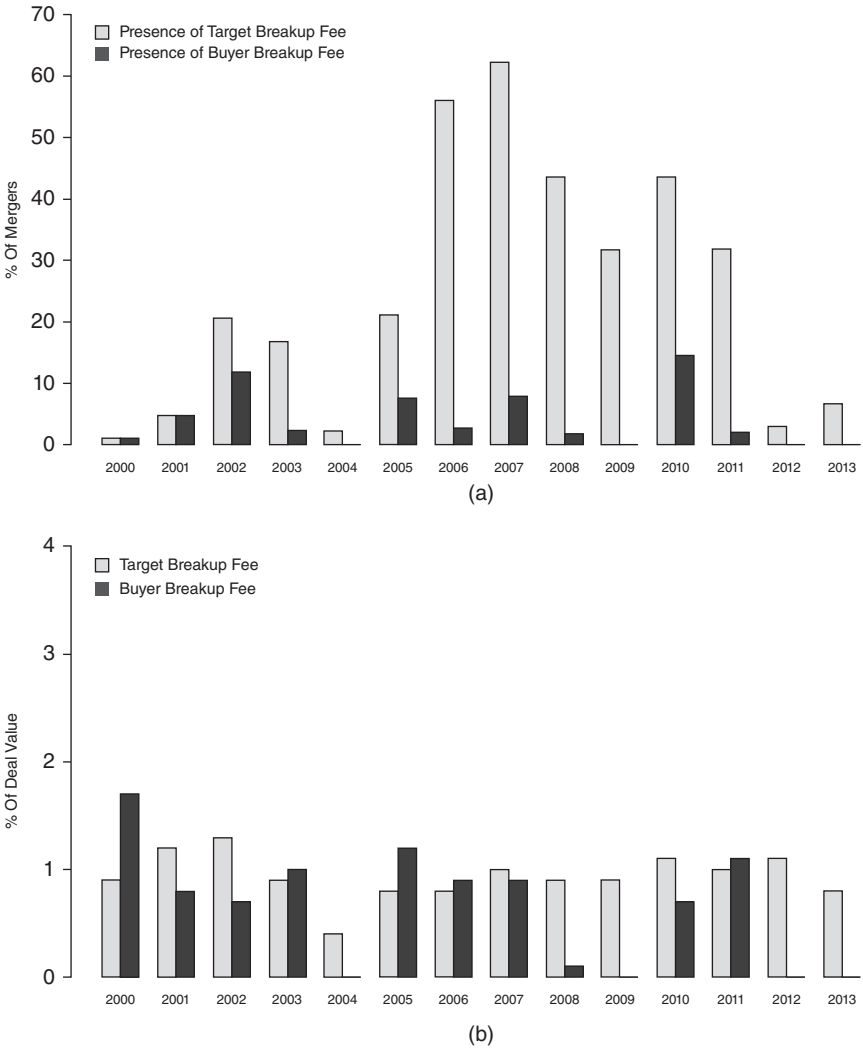


FIGURE 4.8 U.K. Breakup Fees: (a) Prevalence of Breakup Fees (b) Level of Breakup Fees

EXHIBIT 4.1 BREAKUP FEE IN THE ACQUISITION OF COVE ENERGY BY SHELL

We refer to the possible Offer being considered by you (“Shell Bidco”) for the entire issued and to be issued share capital of Cove Energy plc (the “Company”) substantially on the terms of the attached press announcement (the “Press Announcement”).

You have indicated that you are not willing to announce the Offer unless the Company agrees to pay you a fee as set out in clause 1 below (the “Break Fee”) in the circumstances set out below.

The following terms and conditions shall apply in relation to the Break fee:

1. We agree and undertake to pay you, in Pounds Sterling, £11,140,147 subject to adjustment in accordance with the VAT Schedule (The “Break Fee Amount”) if the Offer, having been announced, lapses or is withdrawn and before the lapse or withdrawal an Independent Competing Offer for the Company has been announced (whether under Rule 2.4 or 2.7 of the Takeover Code or otherwise), which Independent Competing Offer or other Independent Competing Offer subsequently becomes or is declared unconditional in all respects.

[...]

6. This letter agreement shall be governed by English law and for the purposes of this letter:

[...]

b) “Independent Competing Offer” means an offer (as defined in the Takeover Code)(whether or not on a pre-conditional basis) which is announced, made, or entered into by a person (other than you) who is not acting in concert with you (as defined in the Takeover Code).

Source: Letter Agreement between Cove Energy plc and Shell Exploration and Production (XL) B.V. Dated April 24, 2012.

In continental Europe, the availability of break fees varies from country to country. No public company mergers in France, Austria, and Germany have break fees. In the Netherlands, Belgium, Italy, Switzerland,

Luxembourg, and Spain, public company mergers have occurred with break fees. However, given the low deal volume in these countries and the rare occurrence of break fees, there is little point in further analysis.

Although at least buyer breakup fees appear to provide a strong incentive for closing a merger transaction, a case can be made that they are overrated. Their principal benefit is to the buyer, who gets a nice payoff when a higher bidder comes along and acquires the target. In the rare cases where buyers must pay breakup fees, lengthy litigation is begun, and buyers try any means available to get out of their payment obligation. The collapse of the recent private equity–buyout boom provides many examples of busted mergers where private equity firms escaped the payment of breakup fees that could have had crippling effects on their businesses. Private equity firm J.C. Flowers was potentially on the hook for a record \$900 million breakup fee after it pulled out of the acquisition of student loan provider Sallie Mae. Even though part of the breakup fee was to have been paid by the banks that had committed to providing the financing for the buyout, it would have affected Flowers’s ability to raise funds for future deals among investors if such a large sum had been used to pay for the nonconsummation of a buyout rather than actually invested. Sallie Mae, Flowers, and the banks settled the litigation within only three months through a deal in which J.P. Morgan, Bank of America, and a syndicate of other banks provided Sallie Mae with \$31 billion of financing.

A similar arrangement helped Goldman Sachs Group and Kohlberg Kravis Roberts avoid paying a \$225 million breakup fee when they pulled out of the \$8 billion acquisition of Harman International Industries. They acquired \$400 million in convertible bonds from Harman instead, paying 1.25 percent interest. The proceeds of the bond were used to repurchase shares. Harman would have been better off receiving the breakup fee rather than a loan that must be paid back in one way or another—either in cash or by dilution of existing shareholders. Harman could have used the breakup fee to repurchase stock and then borrowed another \$175 million to retire additional stock. It would have left its balance sheet in much better shape with less debt. It is unclear why the board accepted a transaction that was so unfavorable to shareholders.

Large breakup fees have become a feature of many transactions where boards take their fiduciary duties seriously. A merger agreement with its exclusivity provisions, MAC clauses, and break fees can give the acquirer a free option. If everything goes smoothly, they acquire the target; when there is a problem, they can walk away from the target. Boards have come to recognize this dilemma and demand acquirer break fees more aggressively than in the past. In some mergers reverse breakup fees have recently reached levels unimaginable just a few years ago. For example, in the acquisition

of Motorola Mobility by Google announced in August 2011 the reverse breakup fee would have amounted to up to \$2.5 billion, which compares to a transaction value of only \$12 billion. Similarly, in the \$24.3 billion acquisition of Forrest Labs by Actavis plc in February 2014, the reverse breakup fee was \$1.175 billion, an unusually large percentage for such a large transaction. In both cases, the size of the breakup fee probably was driven by concern over antitrust risk. By imposing punitive breakup fees, the target board can ensure that the acquirer will use its best efforts to resolve antitrust issues—for example, by consenting to the divestiture of business units.

SEVERITY OF LOSSES

After probabilities, the second dimension to losses is severity. Severity is the extent of a loss on a given merger if it were to fail. To illustrate the difference between expected losses and severity, assume that arbitrageurs were to take positions in a large number of mergers that are exactly identical. A small fraction of these mergers will collapse, whereas the rest of the mergers are closed. Assume that the arbitrageur suffers a loss of 25 percent on each of the mergers that collapses. The 25 percent loss is referred to as the severity. Assume that 5 percent of the mergers collapse. The probability of collapse is 5 percent. Statisticians define the expected loss as $0.25 \times 0.05 = 0.0125$. This means that the arbitrageur would expect to lose on average 1.25 percent due to mergers that collapse. Severity is analogous to the quantity known as loss given default in credit analysis.

It was shown in the previous section that the determination of probabilities involves much guesswork. The determination of severities does even more so. The principal method available to arbitrageurs is a chartist approach, coupled with subjective adjustments. Valuation techniques, such as fundamental valuation or comparables analysis, can be helpful also.

Fundamental techniques can be helpful by giving a point of reference where the stock price should trade absent the merger. But for a variety of reasons, stocks rarely trade where fundamental methods suggest they should trade. When a merger fails, the last thing in arbitrage investors' minds is the theoretical, fundamental value of a company. Most seek to exit their holdings immediately. Therefore, in the short run, technical trading considerations outweigh any fundamental value that stock may rightfully have. For mergers that fail to close over a longer period of time, or where industry conditions are changing, a fundamental approach may yield better estimates.

Nevertheless, the problem with both fundamental and technical methods is that they fail to capture the primary driver of the fall in the

target's stock price: the sudden overhang of sell orders by arbitrageurs who want to liquidate their positions when a merger collapses. Fundamental methods are least able to account for this effect. Chart-based methods are generally a little more useful in trading scenarios where fundamental methods cannot be used. The problem underlying the collapse of a target company's stock price has two sources:

1. *The merger premium.* The purchase of a stock is done at a premium to its trading price before the merger. Once the merger is no longer an option, the stock should return to its regular nonmerger trading level.
2. *The change in the composition of a company's shareholder base.* With the announcement of a merger, many long-term investors sell to arbitrageurs. Long-term investors are happy to capture the premium at which the company is acquired but are unwilling to assume the risk that the merger collapses. Arbitrageurs take the opposite position and provide sellers with liquidity. If a merger collapses, arbitrageurs no longer want to hold the stock, and sell. Long-term investors, however, do not buy back the stock immediately, so the overhang of sell orders leads to a drop in the stock price. In some instances, the price can even drop below the level it traded when the merger was announced.

Returning to the acquisition of Autonomy by Hewlett-Packard, an arbitrageur looks at the price range in which the stock traded prior to the proposal by HP. Figure 4.9 is a subset of the chart in Figure 2.1. A shorter time frame has been chosen to highlight the critical period just prior to the announcement of the merger. This chart shows that Autonomy traded between £14.05 and £15.38 on the day before the announcement of the merger. However, focusing only on the last day before the announcement is not sufficient. The chart reveals that Autonomy traded as low as £13.44 on August 9 and as high as £18.29 on June 3. The average price in the three months prior to the announcement was £16.83.

Because no scientific approach exists to determine an exact level to where the price could fall if the merger had collapsed, guesswork is needed to make sense of the chart. By observing the past trading range of the stock, an arbitrageur would take a conservative approach and choose a price below £15 as a reasonable assumption of the level to which the stock could fall back. If the arbitrageur had bought the stock at a price of £24.92, as was assumed in the earlier example, then the severity amounts to £9.92 per share if a level of £15 were selected:

$$L = P_P - P_S = 24.92 - 15.00 = 9.92 \quad (4.4)$$



FIGURE 4.9 Autonomy Prior to Its Acquisition by HP

where

L is the severity of the loss.

P_S is the postcollapse price at which the stock can be sold.

P_P is the purchase price.

In other instances, a more conservative or more aggressive assumption could be made. These factors should be considered:

- Was there rampant takeover speculation prior to the announcement of the deal? If so, the stock may have traded higher than it would have otherwise. The downside risk should be adjusted accordingly. The arbitrageur should try to determine when rumors first started circulating and at what price the stock traded then.
- What could be the reason for the collapse of the merger? If a material adverse event occurs, the stock will drop well below the preannouncement price. If the fundamentals underlying the business have deteriorated, then the stock would trade lower absent a merger. Conversely, if the fundamentals of the sector are improving, then a deal failure may not have too severe an impact.
- How are the economic environment and the market overall developing? If there is a deterioration of the stock market in general or the industry

in which the firm operates, then a drop to below the announcement price is likely. Note that not only the severity is affected by such deterioration. The probability of deal failure increases also, so that an arbitrageur takes a hit on two fronts simultaneously. Conversely, if the stock market has been trending upward strongly, then the downside may be lessened by the generally higher level of stock prices.

- Has the industry or the sector been re-rated? From time to time, the announcement of the acquisition of one firm leads to a re-rating of its entire sector. This is particularly the case when strategic buyers make an acquisition. Investors assume quite reasonably that competitors of the acquirer might now feel pressure to make similar acquisitions, for example in order to secure a supply chain. The result is that valuations in the entire sector will be higher and the chartist approach advocated here will overestimate downside exposure.

As an aside, consideration of the last point by many arbitrageurs simultaneously can introduce a correlation with the overall stock market in merger arbitrage returns. If merger arbitrageurs reassess the downside risk of a position, they will reduce their holding in that stock. If a sufficiently large number of arbitrageurs reduces their exposure at the same time, the spread will widen, which in turn leads to a drop in the performance of merger arbitrage just at the same moment the market corrects. Some of the put option-like characteristics of merger arbitrage can be explained by this effect.

In stock-for-stock mergers, the calculation of loss severities is complicated by the simultaneous exposure to two stocks: a long position on the target firm and a short position in the acquirer. Estimation of the total severity is more complex due to the short leg of the trade. When a large number of arbitrageurs are involved in a stock-for-stock merger, the short side of the arbitrage will undergo a short squeeze if the deal collapses, as all arbitrageurs seek to cover their short positions at the same time. This effect will aggravate loss severities. The arbitrageur will not only lose from the drop of the price of the stock held long but also suffer a loss from the short squeeze. In other word, a stock-for-stock merger yields twice as many opportunities to lose money as a simpler cash merger.

The loss severity on the target is calculated in the same manner as for cash transactions. In principle, an analogous method for the long leg can be used to determine the loss severity of the short leg: By looking at the trading level before the announcement of the merger, a level can be estimated. However, a judgment must also be made about the likelihood of a short squeeze and the potential price that the stock can reach as a result of the squeeze.

The acquisition of Pinnacle Gas Resources by Quest Resource Corp. is a good example of how arbitrageurs can be hit on both sides of the arbitrage in a stock-for-stock merger. Quest proposed on October 16, 2007, to acquire Pinnacle by exchanging each Pinnacle share with 0.6584 of its own shares. Some Quest shareholders were unhappy with this transaction and felt that they would be subject to an unacceptable level of dilution. But the filing by Advisory Research, shown in Exhibit 4.2, contained another hint that Quest would have significant upside should the transaction collapse, and hence that a short squeeze might be possible.

EXHIBIT 4.2 LETTER TO THE MANAGEMENT OF QUEST RESOURCES BY ADVISORY RESEARCH

It is incumbent upon each of you as Board members and fiduciaries to preserve and maximize value for the Company's stockholders. By any meaningful objective measure, your issuance of substantially undervalued shares of Common Stock in the Pinnacle transaction would accomplish the very opposite of those objectives. As the Company's largest stockholder, we cannot understand why the Board would pursue this course of action in the face of such tangible evidence of stockholder harm.

Should the Board elect to proceed with the Pinnacle merger, we will regrettably find ourselves in the position of having to consider alternatives to preserve the value of our investment. To that end, and in accordance with Section 78.438 of the Nevada General Corporation Law (the "Nevada Corporation Law"), we hereby request that the Board approve purchases by ARI, its clients, Advisory Research Micro Cap Value Fund, L.P. and Advisory Research Energy Fund, L.P., of additional shares of Common Stock in a transaction or series of transactions such that, subsequent to all such transactions, such persons will beneficially own in the aggregate up to 14.99% of the outstanding shares of Common Stock.

We are requesting Board approval of all such transactions, as we may elect to pursue a "Combination" (as defined in Section 78.416 of the Nevada Corporation Law) with the Company after we beneficially own 10% or more of the outstanding shares of Common Stock and thereby are deemed an "interested stockholder" under Section 78.423 of the Nevada Corporation Law. As you are aware, this Nevada statute stipulates that unless the Board approves the transactions in advance, stockholders that surpass 9.99% ownership of the Company become

subject to a three-year moratorium on pursuing a “Combination” with the Company. Though it is not currently the intention of ARI to independently, or with a third party, pursue an acquisition of QRCP, we may soon determine that it is in best interest of QRCP’s stockholders to solicit third parties that have an interest in acquiring the Company for fair consideration—which we believe would be significantly in excess of the current share price. Though we do not currently have any intention of doing so, we would like to preserve our ability to participate in any ensuing transaction with a third party.

Source: Letter to Quest Resources board of directors, filed with the Securities and Exchange Commission on February 4, 2008, <http://sec.gov/Archives/edgar/data/775351/000090258408000006/qrcp13d.txt>.

Advisory Research suggested not only that it might purchase more shares but also that it would try to find an acquirer to buy the company, presumably at a premium to its trading price. Some of the technical details about sections 78.416 and 78.423 concern freeze-out provisions under state law, which are discussed in Chapter 8.

As a result of the opposition to the merger, Quest’s management renegotiated the terms of the transaction in order to make it more palatable to its shareholders. The exchange ratio was lowered from 0.6584 to 0.5278 only two days after Advisory Research filed its letter with the Securities and Exchange Commission. Nevertheless, approval of the transaction remained difficult for Quest, and the transaction eventually was canceled on May 19, 2008.

The result of the undoing of this merger can be seen in the stock charts of Pinnacle and Quest in Figure 4.10. The spread had been widening for some time. This can be inferred quite clearly through visual inspection of the Pinnacle and Quest charts. Pinnacle’s stock price was falling while Quest’s was rising. On May 19, Pinnacle’s stock dropped severely to under \$3 and settled near \$2.50 over the next few days. Quest’s stock price, however, was rising inexorably, from \$8.91 on the day before the announcement to \$10.81 after the announcement. It even reached \$11.99 the following day—a 34.6 percent jump over the closing before the announcement.

The increase in Quest matches its trading level before the merger announcement quite closely. It had traded between \$9.50 and \$11 before the merger was announced in October 2007. For Pinnacle, however, the drop to \$2.50 was not easily predictable from a chart alone. The steep drop in the months before the transaction with Quest was a sign that

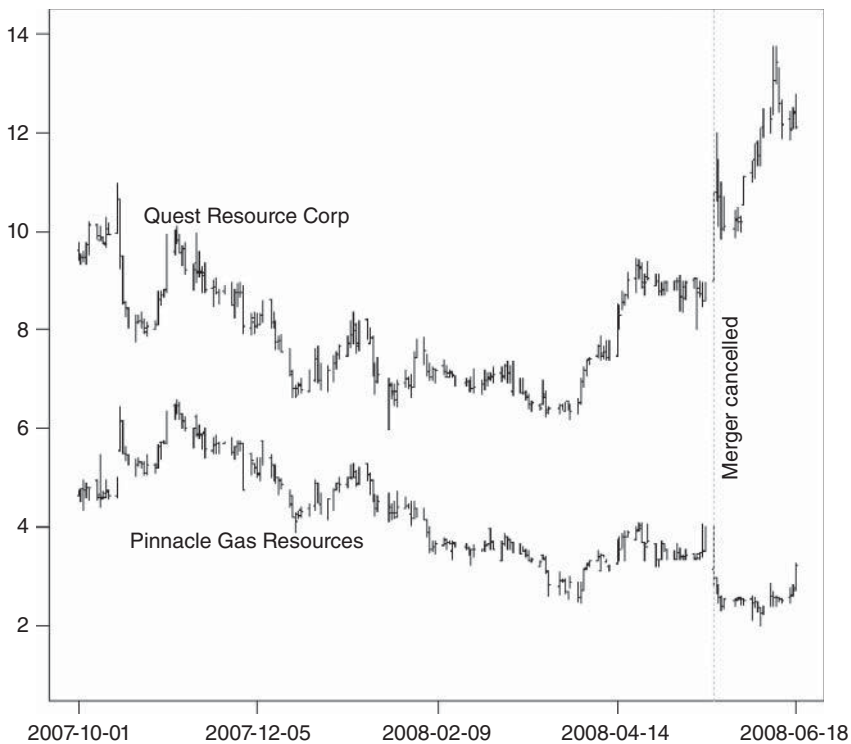


FIGURE 4.10 Pinnacle Resources and Quest Resource Corp. after the Canceled Merger

further downside was to be expected if the merger were not to happen. A fundamental analysis would have yielded more reliable target levels than a chartist approach.

Another method to determine loss severities is the quantitative analysis of past transactions that have failed. This method should be more reliable if applied to a large number of transactions. It also has appeal with arbitrageurs grounded in quantitative analysis and also has value in larger organizations, where statistical inferences are preferred over judgment for decision making. However, at any given time, only few transactions fail, so statistical inferences can be misleading.

Historical information about the premia paid in mergers gives some indication to the downside risk on the target. Table 4.3 shows average premia paid by acquirers over the 1-day, 5-day, 30-day, and 90-day prior trading prices in different countries. These numbers are based on Mergerstat's database for transactions between 1995 and mid-2013.

TABLE 4.3 Average Acquisition Premia over the period 1995-2013

Average premium	1-Day	5-Day	30-Day	90-Day
United States	27.6%	31.2%	37.2%	57.6%
Canada	30.5%	35.1%	43.2%	55.8%
Australia	38.7%	42.%	48.6%	55.8%
United Kingdom	16.7%	20.7%	32.2%	41.3%
Europe	19.6%	23.3%	28.6%	38.6%

Source: Mergerstat, author's calculations. Period covered: January 1, 1995, to June 30, 2013.

Figure 4.11 shows how acquisition premia change over time in the United States and United Kingdom. It is difficult to discern an obvious trend. Nevertheless, it appears that premia have declined somewhat in the United States between 1995 and the financial crisis. Since 2009, they seem to be higher than previously, not only in the United States but also in the United Kingdom. In general, the 30-day premia are higher than 1-day premia. There are two possible explanations for the difference: It indicates either rampant insider trading or that the market anticipates many mergers. In both cases, a stock will trade up to the acquisition price as time approaches the announcement of a transaction. An alternative explanation would be the natural uptrend of markets. Over the period of 1995 to mid-2013, the market has generally traded up. The difference between 30-day and 1-day premia could simply reflect this natural trend. However, the difference is by far greater than what one would expect from a trending market over a short period of 29 calendar days. It should also be noted that the difference between 1-day and 30-day premia has declined since 1995. This supports the insider-trading hypothesis. Regulatory enforcement against insider trading has increased over the last decade, and the numbers suggest that it appears to have a positive effect.

For an arbitrageur, the significance of these data is that downside risk in the portfolio overall varies over time. Even if each merger is examined on its own merits for the potential loss severity from a collapse in the deal, it can be assumed that premia are somewhat correlated with downside risk.

These numbers can give some guidance to how much downside an arbitrageur might expect on a typical merger. However, it still is worth the effort to examine each transaction individually to get a more accurate sense of the severity that an arbitrageur can expect.

Compared to other analysts of downside risk, in particular participants of the credit derivative markets, merger arbitrageurs tend to have a more sophisticated approach to severity. It is not uncommon to see the pricing of credit derivatives performed with a standard severity (or loss given default)

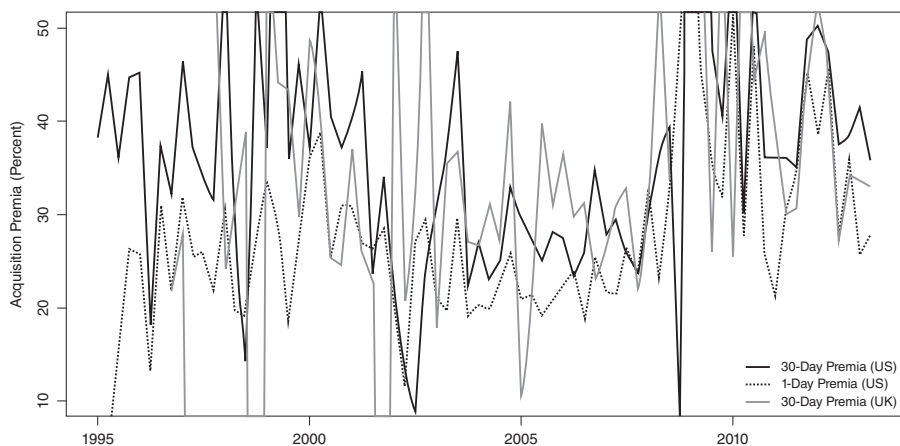


FIGURE 4.11 Evolution of Acquisition Premia

assumption of 40 percent, sometimes with industry-specific variations. Few credit derivative participants will go to the trouble of making a more careful estimation of loss severities. In contrast, merger arbitrageurs routinely estimate separate severities for each of their investments.

EXPECTED RETURN OF THE ARBITRAGE

After an arbitrageur has determined the loss severity and probability of that loss, the risk-adjusted return on the arbitrage is calculated. It will be referred to as the annualized *net return*:

$$R_{AN} = \left(\frac{\Pr_{Success} \times P_C + (1 - \Pr_{Success}) \times (P_C - L)}{P_P} - 1 \right) \times \left(\frac{365}{t} \right) \quad (4.5)$$

The principal difference between the gross returns calculated earlier and the net return shown here is that the latter incorporates the possibility of a loss. The gross return in itself is not a very meaningful measure, because it assumes that the merger will be consummated. Naturally, large gross returns are associated with higher risks of deal failure. Therefore, net returns are better measures of potential profitability than just gross returns, because they incorporate risk.

Net returns make most sense when used in the context of a portfolio of merger arbitrage transactions. Even though it is possible to make a net return calculation for a single merger, it is clear that the net return will never be achieved. As a stand-alone number, net returns are not very useful because the outcome of a single merger is a binary one: Either the merger will be consummated and the arbitrageur will earn the gross return, or the merger will fail and the arbitrageur will suffer a loss in the amount of the severity. What I refer to as net returns are also referred to by statisticians as probability-weighted returns or expected returns. The term *expected* in “expected return” is somewhat of a misnomer. It is highly unlikely that the expected return, or net return, actually is achieved in any single arbitrage transaction. If one were to invest repeatedly in identical mergers, then on average the investor would achieve the net return. Of course, no two mergers are alike, and in practice, a net return calculation is no more than a decision tool. Too much reliance on this number can be dangerous because most of the time it will either be exceeded, or the arbitrageur will suffer a loss.

It is possible to calculate net returns for more than one scenario. For example, a merger may either go through without difficulties or be challenged by antitrust authorities. If it is challenged, there are two possible outcomes: The transaction fails or is approved. Multiple scenarios such as

these can also be computed with the previous formula, albeit with minor modifications:

$$R_{AN} = \left(\frac{\Pr_{Success} \times P_C + \Pr_1 \times L_1 + \Pr_2 \times L_2 + \dots}{P_p} - 1 \right) \times \left(\frac{365}{t} \right) \quad (4.6)$$

or

$$R_{AN} = \left(\frac{\Pr_{Success} \times P_C + \sum_{i=1}^n \Pr_i \times L_i}{P_p} - 1 \right) \times \left(\frac{365}{t} \right) \quad (4.7)$$

where

\Pr_1 , \Pr_2 , and so on signify the probability of each outcome other than a straight passage of the merger.

It should be remembered that $\Pr_{success} + \Pr_1 + \Pr_2 + \dots = 1$

The various other methods for calculating annualized returns discussed in Chapter 2 can also be used with this formula. It is left as an exercise to the reader.

Some arbitrageurs use decision trees to calculate net returns for mergers with multiple outcomes. Decision trees are a tool that will yield the same result as the last calculation, if done correctly. Which method to use is a question of personal preference. Readers interested in decision trees are encouraged to review the extensive existing literature on that topic. Its application to merger arbitrage should be clear from the techniques discussed in this chapter, and is left as another exercise to the reader interested in the matter.

It is tempting to assign too much significance to net returns as a measure of risk and return. Although they represent probability-weighted returns, the inputs are mostly subjective. Even if quantitative methods are used to determine probabilities, it is difficult to say for sure how much credibility they have. Mergers are subject to a large number of variables that behave very differently under varying economic circumstances. Moreover, most arbitrage portfolios tend to have a limited number of positions, because only a limited number of companies merge at any one time. An overreliance on probabilities in such portfolios can be dangerous.

PART

Two

Pitfalls of Merger Arbitrage

Sources of Risk and Return

The two most important drivers of returns on merger arbitrage are the deal spread and timing of the closing. Both are discussed briefly in Chapter 2 but are examined more systematically here. For dividend-paying stocks, dividends are also an important element of return and can, in some instances, even be the only return, as in the case of a preferred stock. Additional ways that arbitrageurs can generate returns are interest on the proceeds of short sales and leverage.

DEAL SPREAD

In Chapters 2 and 4, we discussed how to calculate the spread and factor the risk of a collapse into the equation. In a way, the spread calculation is a chicken-and-egg type of situation: The spread exists because there remains risk, and the risk is explained by the existence of a spread.

Some terminology related to spreads has already been introduced in the discussion of Chapter 2. We will clarify some of the terms here.

Spreads can be *wide* or *tight* and can become more so if they *widen* or *tighten*. “Narrow” is less commonly used to describe tight spreads.

Gross spreads exclude dividends, whereas *net spreads* are supposed to include dividends and all other costs.

Merger arbitrage spreads are typically very tight in absolute terms. A merger arbitrageur rarely makes large returns. However, the seemingly low returns must be viewed against the short time frame in which the returns can be achieved. Typical merger arbitrage spreads are in the range 2 to 4 percent for transactions with little risk of completion. Uninitiated observers may consider merger arbitrage unattractive because of the apparently low returns that can be achieved by the strategy. A return is meaningful only in the context of the time period over which it can be achieved. For merger arbitrage, returns typically are achieved in a very short time frame of three to six months. As we will discuss later in this chapter, the average time frame for the closing of a merger is 128 days, or four to five months. On the back of an envelope, returns of 2 to 4 percent achieved over four months amount to 6 to 12 percent on an annualized basis. This compares

favorably to a long-term return on the stock market of 10.7 percent.¹ A better comparison of general equity and merger arbitrage returns will take the riskiness of this return into account, as we did in Chapter 3.

A spread is expected to narrow over time and finish at zero at the closing of the merger, as we saw in the idealized diagram in Figure 2.2. Naturally, this does not happen in a straight line. The evolution over time of an actual spread, that of Hewlett-Packard's acquisition of Autonomy Corporation, is shown in Figure 5.1. The spread fluctuates, albeit less so than the equity market in general, as we discussed in Chapter 3. For now, it is sufficient to say that the principal driver in fluctuations in the deal spread have to do with events that are specific to the completion risk of the transaction. A secondary driver depends on general trading activity. Many shareholders want to exit their investment once a firm has announced that it is going to be acquired, because there is little upside left and they are unwilling to assume the completion risk. A large sell order, or several smaller orders that happen to arrive at the same time, can lead to a temporary widening of the spread even though no fundamental news has arrived. In those situations, arbitrageurs are faced with the difficult decision of whether to take advantage of the temporarily widened spread and increase their holdings or to join the selling. After all, it is possible that some real information pertaining to an increased risk of deal failure has leaked into the market.

The level of interest rates is by far the most significant determinant of the overall level of merger arbitrage spreads. If interest rates are high, merger arbitrage spreads must be wide to provide an attractive investment alternative to other short-term investments. When interest rates are low, capital will be allocated to merger arbitrage, driving down returns available to arbitrageurs.

Other factors influencing deal spreads are, among others:

- *Overall deal volume.* If more arbitrage opportunities exist, spreads will be wider as arbitrage capital will be deployed over a larger deal universe. However, as discussed in Chapter 3, this is not the strongest driver of spreads.
- *Short rebate.* The short rebate, discussed later in this chapter, is a big contributor to returns for merger arbitrageurs.
- *Cash mergers versus stock-for-stock mergers.* Spreads tend to be wider for cash mergers due to the higher risk that financing may not be available at the anticipated closing. A pure stock-for-stock merger does not have financing risk and will have a smaller spread. However, stock-for-stock mergers provide extra income through the short rebate, which is not available to pure cash mergers.

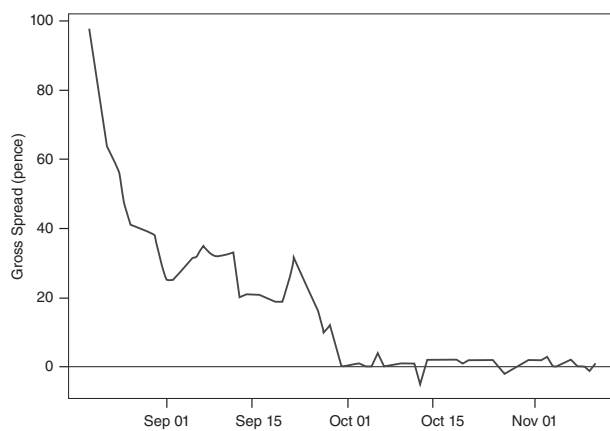


FIGURE 5.1 Evolution of the Spread of the Autonomy Merger

TWO ASPECTS OF LIQUIDITY

Liquidity is a term that describes the ease with which a trader can enter and exit positions in a stock. A liquid stock is one that can be traded easily without any impact on the stock price. Trading volume and bid/offer spreads are the two principal characteristics of liquidity. A high volume and tight bid/offer spreads usually go hand in hand.

Liquidity drives merger arbitrage returns in two ways:

1. Merger arbitrageurs provide liquidity to sellers.
2. Arbitrageurs can earn a liquidity premium on illiquid stocks.

Most mergers are done at a significant premium to the last trading price of the stock. Following the announcement, the stock jumps to a level that is very close to the eventual buyout value. At this point, many long-term holders will try to sell in order to capture most of the acquisition premium. They probably acquired the stock as a value or growth investment, and now that their investment thesis has played out successfully, they have no more interest in holding the stock. Their business is not assuming the completion risk of the merger, but it was the original value or growth strategy. Therefore, they will try to sell.

So who is buying? Other long-term investors will have no interest in a stock that provides limited upside, much downside in the event that the deal collapses, and will be taken off the market shortly. Arbitrageurs are the only buyers of such stocks. The liquidity they provide to the sellers allows them to move on to their next investment. If there were no arbitrage buying, the market would face an overhang of sell orders, and the stock would trade at a wide spread to its buyout price. By providing liquidity under unusual circumstances such as a merger, merger arbitrage contributes to the efficiency of the stock market. In economic terms, it is the provisioning of the liquidity to the market that generates returns for merger arbitrageurs. And because liquidity is limited with an overhang of sell orders after a merger announcement, those who provide liquidity should earn a premium return. Arbitrageurs are liquidity providers; those who sell are liquidity takers.

Trading volumes always spike on the first trading day following the announcement of a merger. The Autonomy example illustrates this point well. Figure 5.2 shows the stock price and volume for the common stock of Autonomy. On the day of the buyout announcement, when Autonomy's stock jumps over £10 to close at £24.52, volume spiked and over 48 million shares were traded. On each of the following two days, volumes were above 10 million but soon dropped to a few million shares per day. Most days saw volumes in the low single-digit millions. This compares to trading volumes

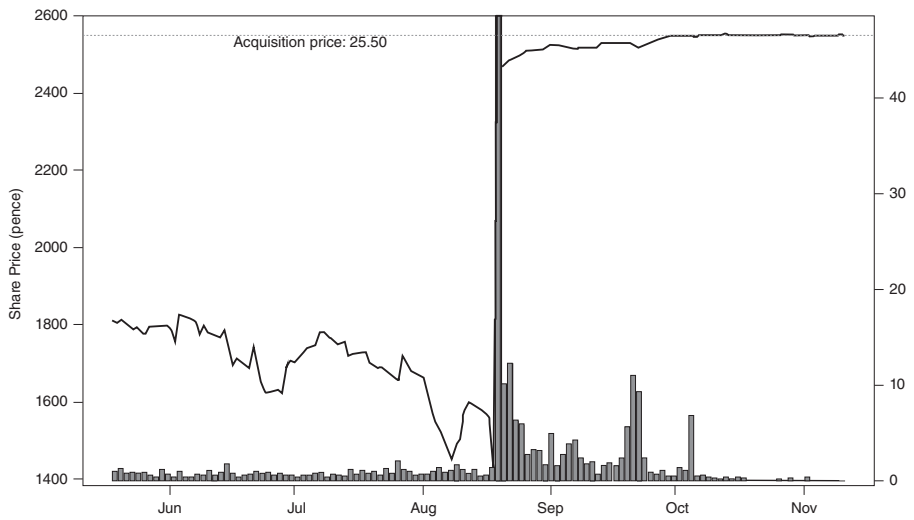


FIGURE 5.2 Price (left scale; line) and Volume (right scale, in thousands; bars) Chart of Autonomy Common Stock

of 600,000 to one million shares on most days in the weeks preceding the merger announcement. The only way that the high volume of sales orders can be absorbed in a stock that has little interest as a going concern is because arbitrageurs provide sufficient liquidity through their buy orders. In the absence of arbitrage, long-term investors eager to sell would receive substantially lower prices.

Another form of liquidity that can help arbitrageurs, or any investor for that matter, earn additional return is the trading volume of the stocks involved in the merger. Liquidity describes the trading volume of a stock and the ability of an arbitrageur to take a position. An arbitrageur will find it difficult to establish a position in a stock with a low trading volume. Typically, these are companies with a small market capitalization, or companies where only a small fraction of the outstanding stock is held by the public and large blocks are controlled by long-term investors who do not buy or sell. This liquidity is somewhat related to the liquidity just discussed, because the overhang of sell orders can have a larger impact on spreads for stocks that do not trade large volumes than for large blue chips.

Low levels of liquidity prevent many large arbitrageurs from taking positions in smaller mergers, even if the annualized return appears attractive. Low trading volumes can make it difficult to build up holdings of even just a few million dollars. For an arbitrageur with an investment book in the billion-dollar range, it is not worth the effort to analyze such a small merger. As a result, spreads can remain attractive for a long period of time for those arbitrageurs small and humble enough to get involved in the transaction.

This is another manifestation of the small-cap premium that has been observed in the investment literature. Small caps delivered returns 4 percent larger than large-cap stocks over the 50 years through 1981, but the small-cap premium has been more difficult to observe since then. Merger arbitrage may be the one area where it managed to survive until today.

Low liquidity can also affect mergers of large companies that have an illiquid class of securities outstanding in addition to a liquid one. One opportunity that I have encountered frequently in large mergers is preferred stock issued by companies that have a liquid common stock. The preferred stock is typically a supplemental element in the firm's capital structure and has a much smaller capitalization than the common stock. As a result, its liquidity is much lower. The spread of the preferred stock is therefore much wider than that of the common stock. Preferred stocks are often liquidated in a merger. However, there is one caveat with preferred shares that arbitrageurs must be mindful of: Before trying to arbitrage a preferred stock, an arbitrageur must make sure that the preferred stock actually will be liquidated in the merger. In many instances preferred stock remains outstanding after a merger. An example of a merger in which only the common stock was

acquired but several classes of preferred stock remained outstanding is the acquisition of Duquesne Light Company by Macquarie Infrastructure Partners and The DUET Group that closed at the end of May 2007. After the merger, six series of preferred stock remain outstanding:

Duquesne Light Co.: \$2.10 Series Cumulative Preferred Stock
3.75% Series Cumulative Preferred Stock
4.10% Series Cumulative Preferred Stock
4.15% Series Cumulative Preferred Stock
4.20% Series Cumulative Preferred Stock
6.50% Cumulative Preferred Stock

All of these preferred shares continue to trade for several years, albeit with little liquidity in the over-the-counter market. On many trading days, not a single transaction takes place in these stocks. These securities were redeemed on November 17, 2014.

Companies take this as an opportunity to buy back outstanding preferred stock at a discount. When Brookfield Office Properties acquired MPG Office Trust in the fall of 2013, it made a tender offer for the preferred stock at the \$25 notional amount, even though this was a cumulative preferred on which \$8.90 in dividends had accrued. Brookfield speculated that investors would simply tender at the notional amount and forgo the dividends that had accrued for several years at a rate of 7.625 percent. However, only 3.8 percent of the holders of the preferred tendered their shares and were paid out. After the closing of the merger, the preferred was converted into preferred shares of Brookfield DTLA Fund Office Trust Investor Inc. under substantially similar terms. Investors were expecting to receive accumulated dividends as Brookfield cannot extract equity gains from the subsidiary that issued the preferred.

The scenario that arbitrageurs are more interested in is when a preferred stock is liquidated in a merger. Trustreet Properties, a restaurant real estate investment trust that was acquired by General Electric on February 27, 2007, had a Convertible Preferred stock traded on the New York Stock Exchange (NYSE) with much smaller trading volume than its common stock. Trading volume of the preferred stock is much more erratic than that of the common stock. The volume chart is shown in Figure 5.3. Before the announcement of the merger, only a few thousand shares changed hands every day, and the occasional day with large trades of 20,000 or more shares is easily identifiable. Following the announcement of the merger, trading volume remains low on most days, amounting to only a few thousand shares. However, large trades generate much more volume now with spikes of up to 100,000 shares. At a price of \$25 per share, that amounts to a mere \$2.5 million of trading

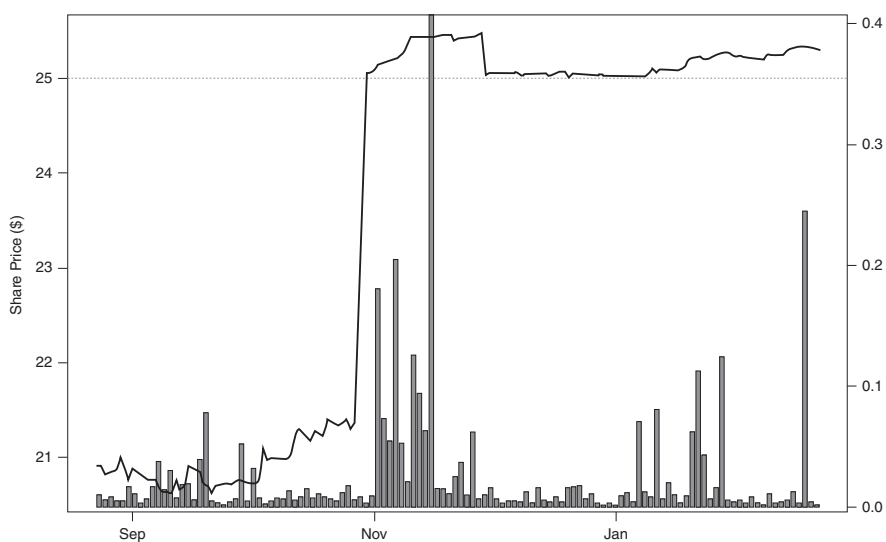


FIGURE 5.3 Volume Chart of Trustreet Series C Preferred Stock

volume. For days on which only a few thousand shares traded, the dollar value is of the order of magnitude of only \$100,000. By comparison, Trustreet's common stock traded volumes north of 400,000 shares with a value of around \$17 per share, or a total trading volume of \$6.4 million on most days. Clearly, it is difficult for a large arbitrageur to establish a meaningful position in Trustreet's preferred stock, and as a result, the common stock had a tighter spread than the preferred.

As discussed previously, trading volume and bid/offer spreads are closely related. Stocks with low trading volumes have wider bid/offer spreads than those with good liquidity. Bid/offer spread, also known as bid/ask spread, sometimes can be one of the sources of returns. Stocks are quoted with two prices: a bid price at which a buyer in the market is willing to acquire a stock, and an ask (offer) price at which someone is willing to sell. These quotes are placed either by other investors or market makers. In the case of electronic communication networks (ECNs), the quotes come from other investors. In organized exchanges or Nasdaq, the quotes are placed by market makers or specialists, who manage an inventory of stocks and provide buyers and sellers with liquidity.

Bid/offer spreads are related to liquidity. Stocks with low trading volumes tend to have tighter bid/offer spreads. Figure 5.4 shows the screenshot of market quotes for MCG Capital, a company with a market capitalization of only \$164 million, five minutes before the New York market close. MCG Capital was going through an acquisition by a private company run



FIGURE 5.4 Order Book for MCG Capital

by PennantPark Floating Rate Capital Ltd, while also subject to a hostile bid by Philip Falcone’s HC2 Holdings. The order book provides information on different trading venues and market makers and their posted bid and offer prices and volumes. For example, it can be seen that Knight Trading, whose abbreviation is NITE, posts a bid of \$4.49 for 100 shares, whereas UBS, whose abbreviation is UBSS, posts an offer of 3,600 shares at \$4.53. The lack of liquidity is evidenced by the low trading volume of only a quarter million dollars that day. It is difficult for an arbitrageur managing several hundred million dollars in assets to build a position in this stock that is substantial enough to have an impact on the portfolio. In can be seen from the figure that the visible part of the order book amounts to only 17,700 shares on the bid side and 9,900 on the offer. An order to buy 10,000 shares, or less than \$50,000 worth of stock, at the market would lift the entire order book from \$4.52 all the way to \$4.65.

Smaller stocks will have even less liquidity. It is not uncommon to see trading volumes below \$100,000 per day in micro-cap stocks. Such securities will also have a wide bid/offer spread. In the example at hand, the bid/offer spread is only one cent, but in even more illiquid securities it can amount to several cents. An arbitrageur must place buy and sell orders in such an illiquid security carefully. After all, arbitrage spreads are very narrow to begin with. If an arbitrageur pays several cents in bid/offer spread, then much of the arbitrage spread is forgone. Conversely, the arbitrage spread can be improved if limit orders are placed carefully between the bid and ask. The drawback of that strategy is that the limit orders may not be filled.

For comparison, order book of highly liquid Mylan NV is shown in Figure 5.5. Mylan had a market capitalization of \$33 billion and, like MCG,

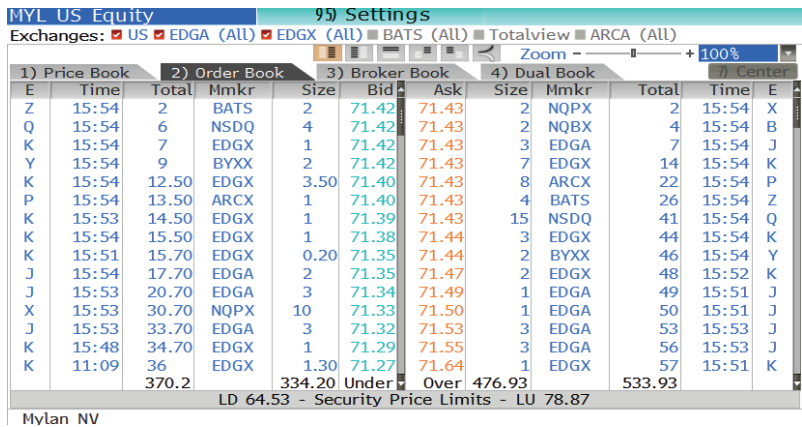


FIGURE 5.5 Order Book for Mylan NV

was subject to a hostile bid by Teva for \$82 per share at the time. The daily trading volume through the same time of day was \$250 million, or by a factor of 1,000 higher than that of MCG Capital. With so much trading, it is easy for an arbitrageur to build a position worth many millions of dollars in this stock.

Unfortunately, with improvements in technology, posted bid/offer prices are becoming less and less relevant. Many market participants use computerized trading systems that show only a small fraction of the true volume that they are willing to buy or sell. An algorithm breaks large orders into many small partial orders that are then routed based on the parameters fed into the algorithm. Once a fraction of an order is executed, the trading software automatically places another order. These systems allow for better execution of larger orders. If a large order were shown in its entirety, other investors would realize that they stand a small chance of getting executed at this price and will drive the price up (buy order) or down (sell order). By placing the large order tactically in smaller pieces, an investor can improve her execution quality. In addition, “dark” pools of liquidity are available to participants of certain ECNs. These are orders that are not shown at all in the market but are matched if an order is placed with the same ECN. This has led to a paradox. Although technology has made stock price information much more available and easier to process, it has also made the information that can be seen much less relevant. If posted order books represent only a fraction of actual order books, it is much more difficult for market participants to gauge the state of the market.

Liquidity also has an impact on a less obvious aspect of merger arbitrage: short selling. The ability to borrow a stock to sell short is linked to its liquidity and free float. More on short selling follows later in this chapter.

Finally, liquidity also determines indirectly the outcome of mergers. The more liquid a stock, and the easier it is for arbitrageurs to build positions, the greater the proportion of stock held by arbitrageurs when the merger is voted on. This effect is discussed in the next section.

BENEFICIAL PARTICIPATION OF ARBITRAGEURS

Because arbitrageurs have a strong interest in seeing the merger close, they will vote in favor. Following the announcement of a merger the shareholder base undergoes a major shift. As already mentioned, long-term holders sell to arbitrageurs whose interest is to earn the spread from a successfully completed merger. In addition to being liquidity providers their purchase of shares increases the likelihood of a merger closing. Therefore, mergers sometimes are structured to appeal to arbitrageurs. Table 5.1 shows arbitrageurs’

TABLE 5.1 Arbitrageurs' Holdings of Target Company Stock in Selected Mergers

Year	Announcement Date	Bidder Name	Target Name	Target Market Value (\$000s)	Arbitrageurs' Holding (%)	Deal Outcome
1985	4/8/1985	Investor Group	Unocal Corp.	15,172,254	16.96	Withdrawn
1986	10/20/1986	Tri-Star Pictures Inc.	Loews Theaters Corp.	9,130,790	—	Completed
1987	3/26/1987	BP America	Standard Oil Co.	27,853,840	16.85	Completed
1988	10/20/1988	Investor Group	RJR Nabisco Inc.	27,795,615	21.63	Withdrawn
1989	7/27/1989	Bristol-Myers Co.	Squibb Corp.	16,641,443	31.56	Completed
1990	7/12/1990	GTE Corp.	Contel Corp.	8,021,125	31.65	Completed
1991	8/12/1991	BankAmerica Corp.	Security Pacific	5,555,271	25.10	Completed
1992	5/27/1992	Sprint Corp.	Contel Corp.	4,861,927	27.11	Completed
1993	10/13/1993	Bell Atlantic Corp.	Tele-Communications Inc.	15,720,005	36.89	Withdrawn
1994	11/10/1994	Shareholders	Allstate Corp.	13,835,660	9.24	Completed
1995	7/31/1995	Walt Disney Co.	Capital Cities/ABC Inc.	22,179,509	28.29	Completed
1996	4/22/1996	Bell Atlantic Corp.	NYNEX Corp.	26,143,261	29.16	Completed
1997	10/1/1997	WorldCom Inc.	MCI Communications Corp.	23,294,576	47.07	Completed
1998	4/6/1998	Travelers Group Inc.	Citicorp	94,508,038	45.36	Completed
1999	1/18/1999	Vodafone Group PLC	AirTouch Communications Inc.	60,079,773	36.76	Completed
2000	1/10/2000	America Online Inc.	Time Warner	116,513,913	50.72	Completed
2001	3/12/2001	Prudential PLC	American General Corp.	20,812,206	42.60	Withdrawn
2002	7/15/2002	Pfizer Inc.	Pharmacia Corp.	53,294,077	46.87	Completed
2003	10/27/2003	Bank of America Corp.	FleetBoston Financial Corp	42,347,745	37.85	Completed
2004	2/11/2004	Comcast Corp.	Walt Disney Co.	56,476,998	40.79	Withdrawn

Source: Micah S. Officer, "Are Performance-Based Arbitrage Effects Detectable? Evidence from Merger Arbitrage," *Journal of Corporate Finance* 15, no. 5 (2007), 793–812. Reprinted with permission by Elsevier.

holdings as a percentage of outstanding shares for a number of large mergers since 1985. The importance of arbitrageurs has increased over time. While through 1996 arbitrageurs rarely held more than 30 percent of a stock, their holdings are sometimes around 50 percent for more recent mergers. Companies that want to improve the chances of closing their mergers should structure them in a way that they appeal to arbitrageurs.

A more systematic analysis of mergers between 1994 and 2008 supports the increasing role played by arbitrageurs. Charles Cao, Bradley A. Goldie, Bing Liang, Lubomir Petrasek² find that in the 1990s arbitrageurs holdings of target companies exceeded 5 percent in less than one mergers in 10. Between 2006 and 2008 in almost two thirds of all mergers arbitrageurs ended up holding at least 5 percent of the shares. The numbers in this study most likely understate the role played by arbitrageurs in mergers as their holdings can only be estimated from publicly available information, and many arbitrageurs may not cross reporting thresholds or invest through instruments that were not reportable at the time of the study.

This study and numerous other studies support the contention that arbitrageur participation increases the likelihood of successful deal completion. Jim Hsieh and Ralph Walkling³ find that arbitrageurs not only hold a larger portion of shares in transactions that are ultimately successful, but also that their involvement correlates with the probability of bid success, bid premia, and arbitrage returns. This suggests that the mere presence of arbitrageurs in the market encourages bidders to pay higher prices, or conversely, that when prices are too low arbitrageurs have enough clout to force bidders to pay full value.

TIMING AND SPEED OF CLOSING

After the deal spread, the second crucial aspect to the profitability is the time a merger takes to complete. A small spread earned in a short period of time can yield a higher annualized return than a large spread in a merger that drags on for a several years. Arbitrageurs will pay particular attention to the question of timing.

Mergers can be structured in two different ways: as classic mergers, which require a vote by shareholders and in most countries court approval, or as tender offers, which do not require a vote and where shareholders simply sell their shares to the buyer through a tender process. The difference between these mechanisms is described in more detail in Chapter 6.

As a general rule, tender offers can be completed much faster than mergers, because there is no need to hold a shareholder meeting with the associated advance notice requirements, or follow the calendar of a court. Tender offers can close in as little as 30 to 60 days. In a tender offer, shareholders can decide whether to tender their shares directly to the acquirer. The buyer

will try to obtain all shares, but in practice, some shareholders will not tender their shares. Shareholders are not necessarily opposed to the merger but may simply fail to tender for a variety of other reasons. To allow the buyer to acquire the entire target despite not obtaining 100 percent of the shares in the tender offer, tender offers are structured in two steps:

1. A tender offer is launched.
2. A short-form merger is completed to squeeze out any remaining shareholders.

Under the laws of most jurisdictions, once a shareholder reaches a certain threshold of ownership, usually 90 or 95 percent, it can force the minority shareholders to sell it their shares. This provision is called a squeeze-out of minority shareholders. The threshold depends on the applicable law. It is over 90 percent in most U.S. states but can be as low as 85 percent. In Delaware, the threshold is 90 percent, while most European countries require 95 percent. Following a tender offer, the buyer will take advantage of a squeeze-out to obtain control of the target from the last few remaining shareholders.

In the United States a top-up option is available to a buyer who cannot get to the 90 percent squeeze-out threshold to increase its holdings by acquiring newly issued shares of the target.

It is a frequent occurrence that buyers do not get to the requisite 90 percent threshold at the expiration of the first tender offer period. Multiple extensions of tender offer periods are not unusual. In some instances, shareholders do not tender out of ignorance or for other reasons that can be difficult to pinpoint. In those scenarios, tender offer extensions typically work.

The situation is different when shareholders refuse to tender because they believe that the price is insufficient. In these cases, a new sweetened tender offer with a higher price is necessary. Several variations of this scenario can be distinguished. Lafarge S.A. wanted to acquire the publicly held 46.8 percent of its NYSE-traded subsidiary Lafarge North America (see Figure 5.6). Lafarge S.A. first offered \$75 per share price on February 6, 2006, for Lafarge North America, a proposal that few shares were tendered into. Shares of Lafarge North America traded well above \$75, indicating that the market expected a substantial price improvement. A subsequent \$82 tender offer on April 4 received a similarly lukewarm reception. Only following the third sweetened offer of \$85.50 per share were sufficient shares tendered to bring Lafarge above the 90 percent threshold: At the expiration of the offer on May 15, it held 92.37 percent of Lafarge North America and was able to squeeze out the minority shareholders.

In another variation of this strategy, arbitrageurs acquire a large enough stake in the target company so that the minimum voting or tender offer requirements cannot be met. In this case, the acquirer will boost the



FIGURE 5.6 Lafarge North America

acquisition price in order to get a sufficiently large number of shareholders to support the transaction. During fall of 2013, German drug wholesaler Celesio AG agreed to sell itself to McKesson Corp with a minimum tender condition of 75 percent. Shortly after the announcement, Elliott Associates became a shareholder in Celesio AG and reported owning close to 25 percent. Elliott announced publicly that it considered the €23 acquisition price inadequate. Based on trading activity in the stock market, participants could estimate that Elliott must have had acquired a good portion of its holdings above the €23 tender offer price and hence was likely to be serious about not accepting the proposed price. This observation likely caused other market participants to not tender their stakes and hold out for a higher price. Although Celesio's majority shareholder, holding company Franz Haniel & Cie, was committed to tendering its 50.01 percent stake, the acceptance condition was not met.

McKesson eventually raised its takeover offer to €23.50 per share. However, this was insufficient to sway enough shareholders to tender. Even though Elliott and Haniel both agreed to support the revised, higher

transaction, the company still failed to gain the required 75 percent participation. The most likely cause for the failure was the short period of time between the increase in the merger consideration and the closing of the transaction. Even shareholders who wanted to participate may not have had the time to tender. After the merger thus failed, Elliott purchased more shares in the open market and eventually McKeeson came to a private agreement to purchase 75 percent of the shares from Haniel and Elliott. Minority shareholders were not able to participate; however, as McKeeson was likely to sign a domination and profit sharing agreement with Celesio subsequently, which leads to compensation payments to minority shareholders based on the firms appraised value, the shares of Celesio surged to over €25.

Mergers differ from tender offers because they require shareholder approval. The notice periods prior to the annual meeting can be longer than the entire process for a tender offer. The pros and cons of acquiring a

TABLE 5.2 Time Periods Required to Close a Merger in the United States, by Industry

	\$50–500 Million		>\$500 Million		All
	Average	Maximum	Average	Maximum	Average
Commercial Services	93.6	295	108.4	359	106.1
Communications	128.0	308	176.8	374	152.5
Consumer Durables	106.9	313	133.2	257	106.9
Consumer Non-Durables	104.7	344	132.5	330	119.6
Consumer Services	117.9	398	181.2	622	156.0
Distribution Services	93.9	217	117.5	290	118.2
Electronic Technology	95.4	384	113.8	309	100.6
Energy Minerals	138.4	401	130.1	358	138.8
Finance	154.4	688	146.0	764	156.3
Health Services	109.0	358	150.2	430	140.1
Health Technology	84.6	357	105.1	359	98.1
Industrial Services	115.6	365	149.7	365	119.6
Miscellaneous	123.0	129			161.8
Non-Energy Minerals	118.6	232	138.0	447	143.2
Process Industries	98.1	235	150.3	487	128.4
Producer Manufacturing	94.6	315	131.4	513	114.4
Retail Trade	106.3	365	117.2	273	110.8
Technology Services	88.9	358	102.7	581	93.7
Transportation	112.3	220	129.9	252	124.5
Utilities	190.9	467	338.9	546	254.9
Total	117.3	688	135.9	764	128.2

Source: Author's calculations based on Mergerstat data.

company through a merger or tender offer are discussed in Chapter 6. For now, suffice it to say that mergers are more complex and tend to be drawn out for a longer period of time.

The statistics of time periods required to complete an acquisition reflect this. Table 5.2 shows the average and maximum time periods required to close a merger for a range of U.S. industries. Overall, mergers close on average in a little more than four months. Companies in the energy and power industry along with financials take the longest to complete their mergers. This finding reflects the high level of regulation of these sectors and the multiple state regulatory bodies that must give their consent before the closing. Smaller mergers with a value below \$500 million close half a month faster than those with a value in excess of that level.

Interestingly, mergers that fail to close do so a little faster on average than those that close successfully, as shown in Table 5.3. It would have been more intuitive if mergers that fail take longer until it becomes clear that the

TABLE 5.3 Time until the Collapse of U.S. Mergers, by Industry

	\$50–500 Million		>\$500 Million		All
	Average	Maximum	Average	Maximum	Average
Commercial Services	99.3	265	93.7	197	109.4
Communications	103.0	289	99.2	217	93.3
Consumer Durables	113.1	405	98.0	203	102.9
Consumer Non-Durables	105.4	294	96.4	213	89.0
Consumer Services	123.5	350	163.0	523	126.7
Distribution Services	56.6	168	108.0	168	84.1
Electronic Technology	122.9	398	85.8	287	111.5
Energy Minerals	125.4	295	84.7	249	124.7
Finance	139.9	687	140.3	413	143.2
Health Services	172.7	372	68.4	151	121.7
Health Technology	100.9	302	122.1	406	118.6
Industrial Services	155.5	221	117.3	176	118.4
Miscellaneous	90.0	117			128.7
Non-Energy Minerals	83.7	193	156.3	336	96.4
Process Industries	145.9	346	227.8	530	172.0
Producer Manufacturing	92.5	183	160.3	345	148.7
Retail Trade	102.3	283	138.5	287	114.2
Technology Services	66.5	221	120.9	337	98.9
Transportation	109.7	247	132.2	429	104.5
Utilities	38.0	43	220.7	633	186.8
Total Result	111.5	687	133.9	633	119.9

Source: Author's calculations based on Mergerstat data.

merger is beyond hope. This appears to be the case in some individual mergers. Several industries show outliers of mergers that drag on for an extremely long time until they fail. For example, a merger in the financial industry took 687 days until it fell apart for good (the 2004–2006 acquisition of Security Capital by MTN Capital). For most mergers, however, the opposite effect is at work. If a merger runs into obstacles, the parties involved make multiple attempts to rescue the transaction, and eventually succeed. As a result, successful mergers take longer on average.

Smaller mergers both fail and close faster than larger ones. This finding reflects the complexity of large mergers that are more likely to require anti-trust approvals and thus take longer, whether they succeed ultimately or not.

For both collapsed and successful mergers, a few outliers lie at a multiple of the average. These rare events skew the average values to the upside. It should also be remembered that these tables show averages of mergers and tender offers. Tender offers, however, take much less time to close than

TABLE 5.4(a) Timing of Public Company Mergers in Canada

Sector	Completed Mergers		Canceled Mergers	
	Average	Longest	Average	Longest
Commercial Services	76.6	135	140.0	140
Communications	152.8	260	354.0	530
Consumer Durables	65.6	103		
Consumer Non-Durables	94.7	202	73.0	73
Consumer Services	128.2	476	102.3	219
Distribution Services	138.5	272	46.8	114
Electronic Technology	80.5	117	79.0	128
Energy Minerals	72.0	217	88.5	347
Finance	102.9	488	57.2	140
Health Services	98.0	119		
Health Technology	77.6	154	274.7	722
Industrial Services	72.5	174	128.3	199
Miscellaneous	78.9	182	65.0	121
Non-Energy Minerals	105.3	485	83.6	290
Process Industries	139.2	266	73.5	89
Producer Manufacturing	93.9	259	133.5	228
Retail Trade	82.1	137	7.0	7
Technology Services	70.1	134	70.0	70
Transportation	114.1	233		
Utilities	93.6	179	47.5	80
Total	92.2	488	93.0	722

Source: Author's calculations based on Mergerstat data.

TABLE 5.4(b) Timing of Public Company Mergers in the United Kingdom

Sector	Completed Mergers		Canceled Mergers	
	Average	Longest	Average	Longest
Commercial Services	96.6	471	61.6	132
Communications	100.2	193		
Consumer Durables	60.3	106	39.6	65
Consumer Non-Durables	91.5	224	76.3	120
Consumer Services	87.6	495	84.6	393
Distribution Services	87.3	200		
Electronic Technology	77.5	167	59.3	103
Energy Minerals	99.9	291	58.8	155
Finance	82.0	254	59.1	221
Health Services	64.7	104	23.0	23
Health Technology	106.2	345	59.0	94
Industrial Services	81.5	143	52.8	127
Miscellaneous	83.0	83	303.0	303
Non-Energy Minerals	131.4	365	117.4	384
Process Industries	103.7	224	92.0	92
Producer Manufacturing	91.7	201	78.0	218
Retail Trade	114.4	424	79.8	165
Technology Services	68.6	160	96.4	353
Transportation	98.6	246	60.5	90
Utilities	137.5	448	100.7	294
Total Result	91.5	495	71.9	393

Source: Author's calculations based on Mergerstat data.

mergers. Therefore, the distribution of closing times underlying both tables is binomial rather than bell shaped.

In most jurisdiction outside of the United States, mergers close faster than in the United States (Table 5.4). This is partly the result of the tighter requirements of the Takeover Code on the timeline of a transaction, which has been emulated in many countries outside of the United Kingdom, as will be discussed later. In contrast, there are no corresponding constraints on the timeline of U.S. mergers. Moreover, the plethora of regulatory agencies that have proliferated much more in the U.S. federalist system than in other countries contributes to extending the time needed to close U.S. transactions. Continental Europe is an exception. Not only has it a much smaller deal volume than the United States, but the few mergers that do occur take significantly longer to close or fail. The difference is particularly pronounced relative to the United Kingdom, whose Takeover Code is seen as a model for continental European merger legislation.

TABLE 5.4(c) Timing of Public Company Mergers in Australia

	Completed Mergers		Canceled Mergers	
	Average	Longest	Average	Longest
Commercial Services	115.0	254	131.5	192
Communications	101.3	140		
Consumer Durables	78.0	78	36.0	36
Consumer Non-Durables	119.0	182	82.5	165
Consumer Services	152.4	267	89.0	199
Distribution Services	134.5	273	152.0	402
Electronic Technology	68.5	94	334.0	334
Energy Minerals	126.4	356	117.9	467
Finance	117.4	358	102.0	280
Health Services	63.4	105	47.7	130
Health Technology	113.6	140	81.3	205
Industrial Services	82.8	144	98.3	132
Miscellaneous	130.8	182	73.0	151
Non-Energy Minerals	129.7	420	117.2	630
Process Industries	108.3	138	102.2	257
Producer Manufacturing	135.6	206	47.5	63
Retail Trade	195.5	339	53.0	90
Technology Services	119.1	151	126.5	170
Transportation	189.5	276	123.0	142
Utilities	100.0	129	94.0	94
Total Result	124.1	420	105.0	630

Source: Author's calculations based on Mergerstat data.

Arbitrageurs will analyze the timing for each transaction individually rather than work with averages. However, averages can be useful as a point of reference. Companies indicate most of the time in the press release announcing the merger an anticipated time frame. This time frame always should be an arbitrageur's principal data point. It can be adjusted if, based on analysis and experience, the transaction is likely to take longer. Reasons for extending the time frame can be antitrust issues, uncertain financing, shareholder opposition, or any other potential problem.

Over time, as the merger progresses and new information becomes available, the closing date of the merger must be adjusted if necessary. I have found that in the majority of cases, mergers close faster than the initial indication given in the company's press release. However, as soon as a closing date is extended, the annualized return of a merger drops. Therefore, finding an estimate of the closing date that approaches the actual date reasonably well is critical.

TABLE 5.4(d) Timing of Public Company Mergers in France, Austria, and Germany

	Completed Mergers		Canceled Mergers	
	Average	Longest	Average	Longest
Commercial Services	290.0	290	36.0	36
Communications	150.2	314	91.0	91
Consumer Durables	210.5	236	51.0	51
Consumer Non-Durables	90.4	215	108.0	140
Consumer Services	91.8	201	102.3	180
Distribution Services	61.0	61		
Electronic Technology	270.5	629	64.0	126
Energy Minerals			111.0	111
Finance	115.3	511	139.3	314
Health Services			130.0	130
Health Technology	160.1	217	50.5	90
Industrial Services	98.0	112	349.0	349
Miscellaneous	43.0	43		
Non-Energy Minerals	101.5	169	131.0	131
Process Industries	199.8	303	77.3	92
Producer Manufacturing	143.0	366	62.0	122
Retail Trade	281.0	373	869.0	869
Technology Services	173.3	526	250.8	630
Transportation	119.8	188		
Utilities	161.5	259		
Total Result	145.1	629	144.4	869

Source: Author's calculations based on Mergerstat data.

Extension risk affects returns for arbitrageurs in a twofold manner:

1. The annualized return on existing arbitrage positions is depressed.
2. Spreads will widen, which leads to losses.

To illustrate this problem with numbers, let us return to the acquisition of Autonomy Corporation by Hewlett-Packard discussed in Chapter 2 and assume that instead of November 14, the closing date were to be delayed to January 31, 2012. The potential reasons of such a delay are of no interest for the purposes of this discussion. There would be an extra 78 calendar days until the closing if such a delay were to occur, which almost doubles the time until closing. The total time period for the merger is now 166 days instead of 88, and the annualized return under the compound interest method falls

from 10.01 to 5.19 percent:

$$R_{AN} = \left(\frac{P_C + d}{P_P} \right)^{\left(\frac{365}{t} \right)} - 1 = \left(\frac{25.50 + 0}{24.92} \right)^{\left(\frac{365}{166} \right)} - 1 = 0.0519 \quad (5.1)$$

If, however, the annualized spread were to remain constant at 10.01 percent, the price of the stock would have to decline so that

$$\left(\frac{25.50 + 0}{P_P} \right)^{\left(\frac{365}{166} \right)} - 1 = 0.1001 \quad (5.2)$$

$$\text{This yields} \quad P_P = \frac{25.50}{1.1001^{\frac{166}{365}}} = 24.42 \quad (5.3)$$

Therefore, the gross spread would widen by £0.50 to £1.08. Given that the initial spread was only £0.58, this is almost a doubling. Arbitrageurs will suffer losses as a result of the extension. Of course, these losses are only temporary and occur only for those arbitrageurs who are forced to mark to market. Arbitrageurs who report their results only monthly or even less frequently may not even show these losses. If the merger is consummated, the spread will narrow again, and eventually arbitrageurs will recover the marked-to-market losses.

When a deal is extended, both the first and second effects happen simultaneously: Arbitrageurs with existing positions see their realized return shrink and the spread widen. However, the spread is likely to widen much more than the simple mathematical parity of a constant annualized spread as discussed above would suggest. The market perceives the extension of a merger as a signal that the deal may be in trouble. In this case, arbitrageurs will require a higher annualized spread to compensate for the higher perceived risk.

Sometimes the widening can be large briefly intraday and provide trading opportunities. This temporary widening can be caused by sudden selling pressure coming from the uncertainty created by the announcement of the deal extension. If arbitrageurs themselves are sellers, market movements can be swift because the very providers of liquidity have turned into liquidity takers.

Extensions of the time a merger takes to close can also provide additional return if shareholders receive an extra dividend payment. Whether a dividend can be expected is stipulated in the merger agreement. Sometimes merger agreements restrict a company's ability to make dividend payments. In the case of real estate investment trusts (REITs) discussed in the next

section, merger agreements often specify that dividends will continue to be paid in amounts sufficient to maintain REIT status until the closing. If an additional dividend is received, it will at least partially offset the reduction in net annualized return that the arbitrageur suffers from the delay. In rare instances, if a company pays very high dividends, or in cases of preferred stock, additional dividend payments actually can boost the net annualized return.

Ticking Fee

Some merger agreements provide for a daily accrual of additional payments if a transaction does not close by a specific date. Such a provision fulfills two purposes: first, it compensates investors for the time value of the delay; second, it acts as a penalty that encourages the buyer to close the transaction promptly.

In the \$12.7 billion acquisition of Life Technologies Corporation by Thermo Fisher, delays were expected due to antitrust concerns. In order to force the buyer to resolve any regulatory issues promptly, a daily fee of \$0.0062466 per share was going to be added to the merger consideration of \$76 after January 14, 2014. The fee is referred to as a *ticking fee*. This timeline gave the buyer 279 days, or about 9 months after the April 10 merger agreement, which is almost twice the 140-day average that mergers in the health services sector take to close. In the event of a one-month delay beyond that the ticking fee would have added a quarter percent to the merger consideration. This is not a very attractive increase as the annualized spread on the arbitrage traded at around 10 percent to reflect the anti-trust risk of this merger. The actual closing of the transaction occurred on January 31 with a delay of 17 days. Following the announcement of the fulfillment of all antitrust conditions, notably the sale of Life's gene modulation subsidiary to GE Healthcare, the stock closed on January 31 at \$76.07, which reflected an increase of \$0.106 that resulted from the ticking fee.

Ticking fees are still an oddity, although their increased use reflects the desire of target companies to compensate shareholders of the selling firm to compensate them for delays that can result from antitrust reviews and other complexities in deal structures. For example, when private equity firm Cerberus agreed to acquire supermarket operator Safeway in March 2014, a ticking fee of \$0.005342 per day per share was included if the merger were to take longer than one year. This corresponds to an annualized increase of the merger consideration of 6 percent. However, since Safeway was not allowed to pay quarterly dividends after one year, almost half of the ticking fee simply compensated shareholders for the loss of the regular quarterly \$0.20/share dividend.

DIVIDENDS

Historically, dividends have made a large contribution to the returns achieved by investors in the stock market. With the multiple expansion in the bull market since 1981, the unfavorable tax treatment of dividends relative to capital gains, the widespread use of stock options in management compensation,⁴ and the widespread acceptance of theories promulgated by two academics, Franco Modigliani and Merton Miller, dividend yields of most indices have fallen to around 2 percent. Modigliani and Miller show that in a hypothetical world without taxes, investors are indifferent between receiving capital gains and dividends.

Dividends historically have been an important driver of returns earned on stocks until the Modigliani-Miller paradigm became widely accepted and capital gains replaced the role of dividends. For merger arbitrageurs, dividends remain an important element of return.

It was shown in Chapter 4 that merger spreads are usually very small and amount to only a few percentage points. Therefore, dividends that amount to 2 percent per year on average can make a difference; in cases of income-producing stocks, they can present the bulk of the return. In the example of GrainCorp, the annualized return would have been negative without dividends as the trading price reflected the large special dividend that investors stood to receive. When dividends are taken into account the annualized return would have been a more reasonable 7.21 percent rather than negative.

It was also shown in Chapter 2 how dividends complicate stock-for-stock mergers, because an arbitrageur must pay the dividend on the stock sold short. Dividends on the long leg of an arbitrage increase returns; dividends paid on the short leg diminish returns.

In addition to providing additional income, dividends can also alter the tax effect of an arbitrage strategy. The tax treatment of dividends is a science in itself and can become complex when arbitrageurs make cross-border investments. In fact, most countries now impose withholding taxes on foreign investors that can make the difference between an attractive arbitrage opportunity and a not very appealing one. A further complication is added by double-taxation treaties, which may provide exemptions from withholding or the ability to claim back dividends that have been withheld. However, it has been reported that reclaiming withheld dividends is not always smooth and some countries simply fail to fulfill their treaty obligations and do not make restitution, or do so only after multi-year delays.

In the United States, until recent changes in tax rates, dividends used to be taxed as ordinary income, whereas most investors held stocks for

long periods of time, so that their capital gains were taxed at a lower tax rate applicable to long-term capital gains. This changed with the Jobs and Growth Tax Relief Reconciliation Act of 2003, which introduced a new lower “qualified” tax rate of 15 percent as long as the stock has been held for more than a 60-day period that includes the dividend date. With the Tax Increase Prevention and Reconciliation Act of 2005, this 15 percent tax rate for dividends has been extended. As of 2013, the tax rate for qualified dividends was increased to 20 percent to match that of the similarly increased tax rate on long-term capital gains. The effect of this change in the tax treatment of dividends is that for long-term holders of a stock, there is no difference in the tax treatment between dividend payments and capital gains (other than second-order effects, such as a potential deferral of the tax payment, or compounding).

However, arbitrageurs are not long-term holders of stocks and therefore experience more complex tax effects. Arbitrageurs have two sources of income: capital gains earned from the spread of the merger and dividends. Most mergers close in less than one year, and under current U.S. tax laws, short-term capital gains are taxed as ordinary income. Under the old tax regime, short-term capital gains and dividends were awarded the same tax treatment, and arbitrageurs were indifferent between generating capital gains or dividend income.

Since the introduction of the favorable tax rate on “qualified” dividends, the situation has changed. Many mergers take longer than 60 days to close, and often arbitrageurs find themselves holding a dividend-paying stock for more than 60 days. These dividends are taxed at a lower “qualified” rate of 20 percent as long as the arbitrageur meets the 60-day holding period requirement. Capital gains continue to be taxed as ordinary income. Therefore, arbitrageurs often have a preference for dividends over capital gains.

When a dividend-paying stock is expected to be held for a long enough period to qualify for the 20 percent tax rate, an arbitrageur will be better off after taxes than with an otherwise identical spread that consists only of capital gains.

In the case of GrainCorp, the impact of different holding periods has a significant impact on after-tax returns. In the next example, it is assumed that the arbitrageur (or its customer) has a tax rate of 40 percent. This is a reasonable assumption if the client is in the highest federal tax bracket of 35 percent and also pays state and local taxes and possibly also Medicare taxes. If the shares are held for less than 60 days, the entire net spread will be subject to income taxes at 40 percent:

$$T = (12.20 + 1.00 - 12.8239) \times (0.4) = 0.15044 \quad (5.4)$$

The annualized after-tax return becomes

$$R_{\text{ANT}} = \left(\frac{P_C + d - T}{P_P} \right)^{\left(\frac{365}{t} \right)} - 1 = \left(\frac{12.20 + 1.00 - 0.15044}{12.8239} \right)^{\left(\frac{365}{157} \right)} - 1$$

$$= 0.04139 \quad (5.5)$$

where

T is the amount of taxes dues.

R_{ANT} is the annualized net after-tax return.

If the shares are held for 60 days and dividends are eligible for taxation at the qualified rate of 20 percent, then the tax impact is reduced by more than half:

$$T = (12.20 - 12.8239) \times (0.4) + 1.00 \times 0.2 = -0.0496 \quad (5.6)$$

This leads to the unusual situation where the investor will experience a tax *gain* from an arbitrage. Whether or not such a gain can be used in practice will depend on the investor's particular tax situation. In fact, as this company is Australian, a U.S. investor probably would not be able to claim qualified dividend treatment. This example illustrates well how tax effects can alter the profitability of an arbitrage investment and why tax effects must be taken into account.

$$R_{\text{ANT}} = \left(\frac{P_C + d - T}{P_P} \right)^{\left(\frac{365}{t} \right)} - 1 = \left(\frac{12.20 + 1.00 - (-0.0496)}{12.8239} \right)^{\left(\frac{365}{157} \right)} - 1$$

$$= 0.07887 \quad (5.7)$$

If a client pays taxes at the rate for the alternative minimum tax, the difference will be less. Many arbitrageurs have tax-exempt clients, such as university endowments or pension funds. In these cases, tax considerations obviously are irrelevant.

Arbitrageurs have to be careful to follow the ex-dates and record dates of dividends correctly. Dividends are paid only to the holders of record on the record date. The payment date is usually two to four weeks after the record date. Shares acquired before the payment date of the dividend, but after its record date, are not eligible to receive a dividend payment.

REIT dividends are a special case: REITs are required to pay out 90 percent of their income to their investors in order to maintain their status

as pass-through entities that distribute substantially all income and need not pay taxes at the entity level. REITs are governed by subchapter M of the Internal Revenue Code, which also regulates mutual fund taxation. When a REIT is acquired, it will make a final dividend payment on the day of the closing that is large enough to satisfy the requirement of subchapter M. Shareholders do not normally know the exact amount of the final dividend payment that they can expect. Management guidance often underestimates the actual payment. It also varies with the timing of the merger. The longer the merger takes, the more dividends must be paid out so that the REIT can maintain its status as a pass-through entity. Merger agreements will stipulate whether dividends will continue to be paid. A typical clause specifies that dividends will be paid until the closing in amounts sufficient to maintain REIT status.

Finally, there is one caveat on the availability of the 20 percent rate for dividends on stocks that have been held for more than 60 days: It does not apply to a stock that was acquired from a short seller. Because the short seller pays the dividend on the shorted stock, it is considered a payment in lieu of a dividend, not a dividend paid by the company. Only dividends paid by the company are eligible for the qualified 20 percent rate; payments in lieu of dividends are not. Buyers of heavily shorted stocks must be careful about the nature of their purchase. Fortunately, there is a trick that a buyer can use to convert a long position in borrowed shares into a long position of unencumbered shares: Request the issuance of a physical certificate. There is a cost involved, not to mention the risk of loss and the effort required to handle certificates. More important, it can be difficult to sell the shares (short sales are a temporary fix, though). However, if an arbitrageur has a sufficiently large holding of a stock, it may be worthwhile taking the extra step to optimize taxes.

SHORT SALES AS A HEDGE AND AN ELEMENT OF RETURN

Short sales are one of the trickier aspects of merger arbitrage that warrant special consideration. Short sales are performed as one leg of a stock-for-stock merger arbitrage. This was described in principle in the example of the CGI Mining/B2Gold Corp merger in Chapter 2. It is often said that shorting requires special skill; whether we call it a skill or not, it is true that shorting requires special attention and is one of the most regulated aspects of stock trading.

In the sense that shorts are entered as part of a two-legged position, merger arbitrage short positions can be said to be hedged. But the hedge works only while the merger is on track to close. If uncertainty about the

closing increases, the short will no longer be hedged and will take on a life of its own.

In order to sell a stock short, an arbitrageur must be able to deliver it. Since the arbitrageur does not own the stock, it must be borrowed from an owner. To borrow shares, an arbitrageur or its broker contacts some of the large clearing firms, which will lend their customers' securities. Institutions that custody their assets with a bank custodian often have their own stock lending desk in order to generate additional revenue. Retail investors can short out of the inventory of their broker's clearing firm.

The cost of borrowing is generally included in the short rebate paid by the broker that handles the short. In the event that an arbitrageur borrows stock elsewhere, it may have to pay a separate fee. The short rebate was discussed previously in the context of the CGI Mining/B2Gold Corp stock-for-stock arbitrage.

The short rebate makes an important contribution to arbitrageurs' returns. Short rebates vary slightly from broker to broker. Large arbitrageurs will obtain higher short rebates than smaller ones. Many retail brokerage firms do not pay their customers a short rebate at all. The example of the CGI Mining/B2Gold Corp stock-for-stock arbitrage from Chapter 2 will be used to illustrate how returns can be affected by different levels of the short rebate.

In the example given in Chapter 2, it was assumed that the arbitrageur would earn a short rebate of only 1 percent, amounting to \$11.21 over a period of 140 days on \$2,923 of short proceeds. This represented an increase of almost 18 percent over the annualized net spread that excludes the short rebate. In late 2012, interest rates were at record lows, and a short rebate of 1 percent is a reasonable assumption. When interest rates are higher in more normal times, short rebates paid by brokerage firms will also be higher and make a larger contribution to an arbitrageur's annualized return.

To calculate the impact of the short rebate in a pure stock-for-stock merger, the rate of the short rebate can simply be added to the annualized net return as a shorthand calculation. In a mixed cash/stock merger, the short rebate must be reduced by the ratio of cash to stock and then added to the annualized return. These two calculations are not accurate but are good enough for most purposes.

For a more accurate calculation, the short rebate must be calculated on the dollar amount sold short, as was done in the CGI Mining/B2Gold example in Chapter 2. Table 5.5 shows how the annualized return on the arbitrage would have improved for different levels of the short rebate. The interest earned is based on the amount of \$2,923 sold short and the annualized return without incorporation of the short rebate is 5.85 percent. For a short rebate of 5.43 percent, the annualized return doubles compared to the return without a short rebate.

TABLE 5.5 Improvement in the Arbitrage Spread of the CGI Mining/B2Gold Stock-for-Stock Merger for Different Levels of Short Rebates

Short Rebate (%)	Interest Earned (\$)	Increase in Spread (%)	Annualized Return (%)	Increase in Annualized Return (%)
0	0	0	5.85	0
0.5	5.61	8.90	6.38	9.1
1	11.21	17.80	6.91	18.2
1.5	16.82	26.69	7.44	27.3
2	22.42	35.59	7.98	36.4
2.5	28.03	44.49	8.51	45.6
3	33.63	53.39	9.05	54.8
3.5	39.24	62.29	9.59	64.1
4	44.85	71.18	10.13	73.3
4.5	50.45	80.08	10.67	82.6
5	56.06	88.98	11.22	91.9
5.43	60.88	96.63	11.69	100.0
5.5	61.66	97.88	11.77	101.3
6	67.27	106.78	12.31	110.7
6.5	72.87	115.67	12.86	120.1
7	78.48	124.57	13.41	129.5
7.5	84.09	133.47	13.97	139.0
8	89.69	142.37	14.52	148.5

In mergers that pay a combination of cash and stock, the dollar amount sold short is much smaller than in a pure stock-for-stock merger. If the cash component is very large, the transaction will provide almost no short rebate.

The gross spread reflects the ability of arbitrageurs to earn additional income through the short rebate. Cash mergers have wider spreads in part because arbitrageurs cannot earn a short rebate and in part because the risk profile is higher due to the risk associated with financing the cash consideration.

A high risk with borrowing shares lies in the propensity of the original owners to ask for the return of their shares at a time that is inopportune for the borrower. The owners may ask for their shares back, for example, because they want to sell their position. When they sell, they will have to deliver their shares to the new owner. The arbitrageur then has only two choices: find another counterparty from which the shares can be borrowed, or cover the short. When many short sellers are required to close their position at the same time, a short squeeze ensues. In a short squeeze, a heavily shorted stock suddenly rallies abruptly. A good sign that a rally is a short squeeze rather than an upside revision by the market of the intrinsic value of a stock is the absence of any fundamental information.

The short seller of a stock must make dividend payments to the buyer. When a short seller borrows shares and sells them short, there are now two owners of the stock: the original owner who has lent the shares, and the counterparty to the short sale. Both are long stock and expect to receive dividends. However, only one dividend payment is made by the company underlying the stock. The dividend payment going to the counterparty of the short sale must be made by the short seller. For most investors, the clearing broker that holds the short position will administer the payment and debit the account directly. We mentioned earlier that this payment in lieu of a dividend is not eligible for the “qualified” tax rate of 20 percent on dividends. Instead, it is taxed as ordinary income even if the shares were held for more than 60 days.

Paying dividends on shorted stock is a cost of carry of the position. The higher the dividend yield, the higher the cost of carry. In theory, stocks respond to the payment of a dividend by dropping by the dividend amount on the ex-date. However, dividends are paid out of income, so that companies with large dividend payments tend to be profitable and do not drop as much, certainly not in the long run.⁵ A quick way to estimate on the back of an envelope the carry for a stock-for-stock merger arbitrage is by comparing the dividend yields of the two stocks.

- If the long position has a higher dividend yield than the short, the position has a negative carry and dividends improve the spread. If the spread were to remain constant, the arbitrageur would earn the differential in dividend yields.
- If the long position has a lower dividend yield than the short, then the position has a positive carry. If the spread were to remain constant, the arbitrageur would have to pay the differential in dividend yields.

This method is a rough estimate only. A more careful estimation of the carry needs to take the exact timing of the dividends into account as well as the anticipated closing of the merger. Future dividend dates and amounts can be extrapolated from historical dividends.

A more extensive discussion about short selling can be found in Chapter 14.

LEVERAGE BOOSTS RETURNS

Merger arbitrageurs are no different from other investors in their desire to boost returns by borrowing. It is appropriate and safe to use leverage when the investments financed have low volatility, such as real estate, fixed income, or private equity. Merger arbitrage is one such low-volatility strategy.

There are two principal ways allowing arbitrageurs to use leverage: through the use of margin or other borrowings, or via derivatives. The two ways differ not only in economic terms but also in the approach taken to evaluate their effect. Derivatives are acquired in connection with specific investments and provide leverage on those investments only, whereas margin or other borrowings are taken against the portfolio as a whole and cannot normally be attributed to a specific arbitrage opportunity.

Margin borrowing is the classic but expensive way to leverage a portfolio. In margin borrowing, an arbitrageur borrows money from a broker and pledges the securities acquired as collateral. In most cases, arbitrageurs obtain this form of financing from their prime broker. The prime broker borrows funds in the money market, or uses funds deposited by other customers, and lends them to arbitrageurs. Proceeds from customers' short sales are another source of funds. Prime brokers effectively are acting as banks for securities traders. Like a bank, the prime broker makes a profit because it lends for a higher rate than it borrows at.

In the United States, due to the more volatile nature of securities markets, the Federal Reserve has imposed capital requirements not only on the brokers but also on the customers who borrow on margin. Under Regulation T, a customer must have at least 50 percent equity when acquiring a security. This criterion is also known as the initial margin requirement. Because securities prices fluctuate so much, the capital requirement for ongoing borrowings is much lower than for the initial margin. After the security has been acquired, a customer must maintain at least 25 percent of the account value in equity, the maintenance margin. This allows for a significant drop in the value of a portfolio. If the equity falls below the maintenance margin requirement, the broker will issue a margin call that forces the customer either to sell securities or to inject additional funds into the account. If a customer fails to do either, the broker will liquidate positions until the maintenance margin is restored. Brokers are free to set more stringent margin requirements, and many do so to protect themselves and their customers from volatility.

Portfolio margining is another way to overcome restrictions on the use of leverage. Rather than being based on the national amount as under Reg T, leverage in such an account is risk-based, where risk offsets are applied across pairs of securities. For example, a portion of the long position in one security can be used to offset the risk of a short position in another stock. For customers with prime brokerage accounts, the minimum account size is \$500,000 (for retail accounts, \$100,000) in order to benefit from portfolio margining, although many brokerage firms apply higher minimum requirements.

Another way to increase leverage is to establish a joint back-office account. Here, ownership of the account is shared between an investor and

its clearing firm. As this is now considered a brokerage firm's account, Reg T does not apply and even higher levels of leverage than with portfolio margining can be achieved. It is said that leverage of 30:1 is possible for accounts holding positions that largely offset each other. Such accounts pose little risk. Presumably, merger arbitrageurs would not be considered a pure enough arbitrage and hence not be eligible for leverage at such an extreme level.

Outside the United States, capital requirements vary. Until recently, many U.S. investors used margin accounts in Europe to gain leverage because regulators there had a more cavalier approach to leverage than their U.S. counterparts. At the time of this writing, it is unclear whether regulation of margin borrowing will become more akin to that in the United States.

The use of borrowings other than through margin is open only to some of the larger arbitrageurs. Investment banks that run arbitrage books can borrow at a small spread to the London Interbank Offered Rate (LIBOR). Their cost of capital typically is allocated on a corporate level under a blended rate of one form or another to each business unit, and the arbitrage desk will be assigned a cost of capital. Imitating investment banks, some large hedge funds recently have tapped the capital markets and issued bonds in order to have access to permanent capital independently of the availability of margin borrowing from brokerage firms. It is clear that the economics of leverage is much more favorable for large operations with access to such a varied array of funding sources at attractive spreads.

Funding arbitrage and other hedge funds has become a very profitable business for prime brokers. Many brokers make more than half of their income from the funding spread between their cost of capital and the margin rate. The other half is made through commissions. The high profitability of margin borrowing to prime brokers is a corollary of the method's expensive nature.

In addition to its high cost, arbitrageurs using margin also make themselves dependent on the business prospects of their prime broker. During the credit crisis of 2007–2008, many hedge funds were forced by their prime brokers to reduce leverage because the brokers themselves suffered losses and needed to reduce their exposure to risky customers. When many customers, including merger arbitrageurs, were forced to sell their holdings, spreads widened on a wide variety of arbitrage strategies, not just merger arbitrage. This had nothing to do with the inherent risk of these transactions increasing; it was caused only by the actions of the arbitrageurs, who are normally liquidity providers. In this case, they became liquidity takers.

COVERED CALL WRITING

A popular technique for enhancing returns on stock positions is the writing of covered calls. The idea is that an investor holds a stock and by writing

a call option against that stock, additional income can be generated. I have come across several financial advisers who recommend this strategy to their customers.

Covered call writing is more complex than many of its proponents admit. Owning a stock and writing a call against it limits the upside: If at expiration the stock price rises above the strike price of the option, the stock will be called (see Figure 5.7). Conversely, if the stock price drops, the option will expire worthless, so that the investor can keep the premium as a profit. But the holder of this position will suffer a loss on the stock that probably will exceed the premium income. This payout profile resembles that of a short put position. When an investor writes a put, the upside is limited to the premium received. However, the downside is practically unlimited. The only limitation is that the underlying stock cannot fall below zero. Many investors are not aware that by writing a covered call, their effective position is identical to writing a naked put. Nevertheless, covered call writing is peddled as a conservative strategy. Most conservative investors would never write a naked put if asked to do so by their financial adviser.

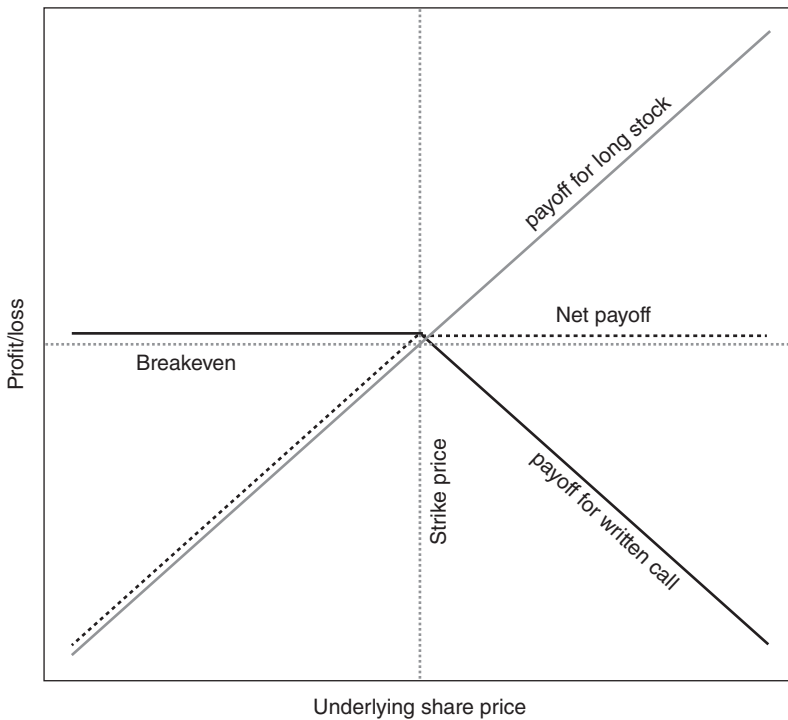


FIGURE 5.7 Covered Call Writing

For a merger arbitrageur, covered call writing makes more sense than for a buy-and-hold investor. In a cash merger, the upside is limited anyway to the buyout price. Adding an additional limitation to the upside through a written call will not affect the payoff profile in any way. Readers are reminded of Figures 1.7 and 1.8, which show that merger arbitrage has a payoff pattern that resembles that of a put option. If the long stock position is supplemented with a covered call, the arbitrageur creates a parallel put exposure in addition to the implicit put created by the arbitrage. However, the risk is not cumulative. The downside risk comes only from the long position in the stock. The written call only limits the upside, which is already limited by the presence of an acquisition proposal.

Covered call writing should be considered only for cash mergers. If the long leg of a stock-for-stock merger were to be used as cover for a call, the stock price of both the long and short might rise. But the long leg of the arbitrage will be called when it rises above the strike price of the written call. This would expose the arbitrageur to losses from the short position. Both the long and short leg are supposed to move in sync when their prices increase, and covered call writing disrupts this principle.

So can covered call writing add extra income to an arbitrage position? Unfortunately, there is no such easy way to make money. First, option premia tend to drop significantly once a merger has been announced. Second, by writing a covered call, the arbitrageur limits the ability to participate in any increase in the acquisition price if, for example, another buyer were to emerge offering a higher price.

Options are priced based on the fluctuation of the underlying stock—its volatility. The higher the volatility, the higher the time value of the option. Once a merger is announced, volatility tends to drop significantly. This effect was discussed in more detail in Chapter 3. Market makers for options are aware that the underlying stock will soon cease to exist and price the options accordingly. Figure 5.8(a) shows the implied volatility of options of Superior Essex Inc., which was acquired by Seoul-based LS Cable in August 2008, for a period of one year prior to the acquisition. For the time leading up to the June 11, 2008, announcement of the merger, Superior Essex call and put options traded at implied volatilities mostly between 40 and 50 percent, temporarily shooting up to 60 percent. After the merger agreement was announced publicly on June 11, implied volatility dropped to between 5 and 20 percent. The associated option volume is shown in Figure 5.8(b).

As a result of the sharp drop in option volatility, premia drop to levels that make covered call writing unattractive. Only the writing of long-dated call options can in some instances generate noticeable additional returns, because the additional time value increases the premium.

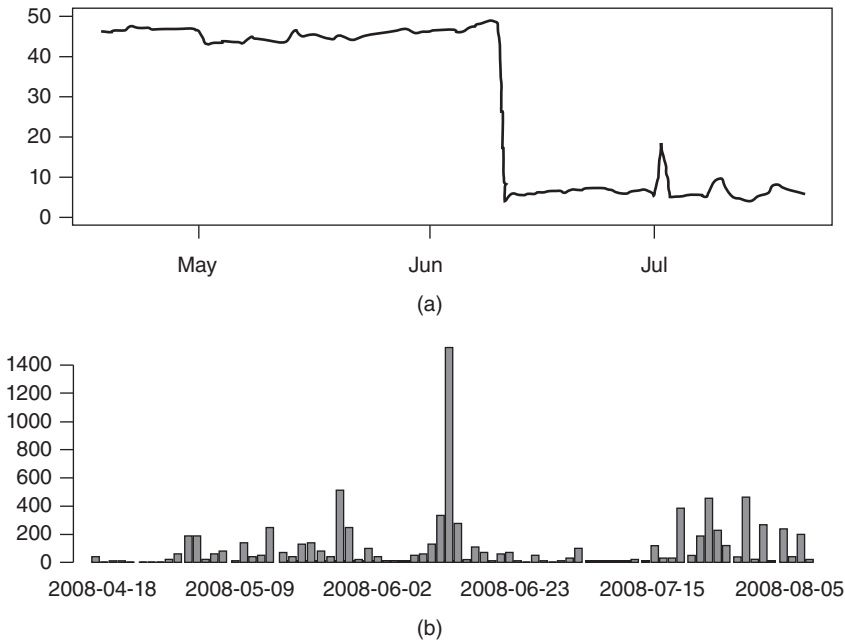


FIGURE 5.8 (a) Implied Volatility and (b) Option Trading Volume of Superior Essex Inc.

It should also be noted from Figure 5.8(a) that implied volatilities for call and put options track each other very closely. Due to call-put parity, implied volatilities should be close for calls and puts. This shows that the option markets remain efficient even when a company is about to be delisted.

COMMISSIONS AND PORTFOLIO TURNOVER

Since fixed commissions were abolished in the United States on May 1, 1975, the cost of executing stock trades has dropped almost every year. The “May Day” of 1975 may have been the trigger, but the biggest enabler of the drop in commission has been technology. The securities markets are becoming increasingly disintermediated. While it was common during the 1990s to place trades via a telephone with a broker, software applications provide today’s investors direct access to the various execution venues with split-second order transmission.

The average commission in 1980 was close to \$0.40 per share and has dropped to roughly \$0.05 per share in 2003, according to data by Greenwich Associates. Today, low-cost commissions of direct access providers are even lower, amounting to less than \$0.01 per share. Some brokerage firms offer flat-rate tickets for low-priced shares, where \$0.01 would constitute a larger percentage of the stock's price than for a typical stock priced at \$20.00.

For arbitrageurs, this development has been positive for two reasons:

1. The drop in the price of commissions has helped to maintain profitability of merger arbitrage spreads.
2. Technological improvements have improved the placement of orders and decreased the risk of trading errors.

In the examples of merger arbitrage investments discussed in Chapter 2, the dollar amounts and percentages of spreads were always very small. An overview of the spreads is shown in Table 5.6.

If an arbitrageur were to pay commissions at the level of 1980, the CGI Mining merger would generate a loss and the other two would be uneconomical. Even at 2003 commission levels, the CGI Mining merger would not be profitable as commissions have to be paid on both sides, the CHI shares that are purchased and the B2Gold shares that are sold short. Fortunately, commissions are now at \$0.01 per share and below, so their impact on profitability is less significant. In stock-for-stock mergers like CGI Mining/B2Gold, arbitrageurs must pay two commissions: one for the long leg and another for the short leg of the arbitrage. The impact of the level of commissions is more significant than for cash mergers. The precise impact depends on the exchange ratio. Assume a commission rate of \$0.01/share. In the case of Alterra/Markel, the exchange ratio was 0.04315, so that relative to each share purchased the total commission is \$0.0104315. In the case of CGI where the exchange ratio is 0.74, the total commissions relative to each share of CGI are \$0.0174.

As an aside, while commissions in the United States and generally in Canada are quoted on a per-share basis, in other countries they are quoted as a percentage of the amount invested. A typical percentage is 0.1 percent

TABLE 5.6 Overview of Spreads from Examples in Chapter 2

Transaction	Absolute Spread	% Spread (%)	Annualized Return (%)
Autonomy/HP	£0.58	2.33	6.74
CGI Mining/B2Gold	C\$0.063	2.2	5.0
Alterra Capital/Markel	US\$0.62	2.17	4.14

in developed markets outside of North America, although in many countries that can be a multiple of that number.

In addition to reducing commission rates improvements in trading technology have also helped arbitrageurs handle narrow spreads more efficiently. In stock-for-stock mergers, the arbitrageur must acquire and sell short two securities simultaneously. This can be difficult to do if the arbitrageur enters separate orders for each side manually. If the market moves quickly, the arbitrageur may get a fill on one side but not the other. The market is then moving against the filled side, but the other side is not yet offsetting the executed one. For example, if the market rises after an arbitrageur has been filled on the short sale, the order for the long leg of the arbitrage may not get filled, and the arbitrageur will have to pay a higher price, which reduces the spread that can be earned. Using market orders instead of limit orders can mitigate this risk somewhat, but market orders also risk reducing the spread.

Fortunately, a number of software providers have developed trading applications that allow arbitrageurs to enter spread orders. The arbitrageur defines a spread and a ratio at which an arbitrage is to be executed; the broker's computer then places orders so that the defined spread is locked in, and the right number of shares is purchased and sold short. The arbitrageur can also select which leg should be executed first and how many shares of the order should be shown at any one time (reserve order).

Some brokerage firms offer their customers so-called soft-dollar payments. These are arrangements whereby some of the commission paid for the execution of trades is used to pay for research services or certain eligible software products, such as Bloomberg terminals. Arbitrageurs who use soft dollars will pay higher commissions than those who choose execution-only services. Due to the short holding periods of mergers, arbitrageurs trade frequently and incur significant commission expenses, and hence soft-dollar credits, if they use these facilities. Therefore, soft dollars can have a substantial impact on performance. If an arbitrageur trades with client funds, soft dollars are clearly not in clients' best interests. Nevertheless, some arbitrageurs use soft dollars to help offset many of the arbitrageurs' expenses.

Commentators cite portfolio turnover as a negative factor in evaluating investment managers. Merger arbitrageurs generate large portfolio turnover, not infrequently of 300 percent and more, due to the short time frame for mergers to close and the long/short nature of many investments. The negative influence of high portfolio turnover on traditional investment strategies is based on two effects of frequent trading:

1. Frequent trading generates commissions and other transaction costs, such as bid/offer spreads.
2. Frequent sales of stock generate short-term capital gains.

Both arguments are valid in the context of traditional investment strategies but are inapplicable for merger arbitrage. For a start, any strategy that uses a long/short approach to investing will have a higher portfolio turnover than a buy-and-hold strategy. The simultaneous purchase and sale of stock generates additional turnover that a long-only investor does not incur. Of course, the risk profiles of long/short and long-only investments are drastically different, so portfolio turnover is not a good metric to compare the strategies. Similarly, commissions incurred will be higher in any long/short than in a long-only portfolio. The higher cost of executing the trade is a necessary condition for achieving the desired risk profile of the long/short strategy as opposed to a long-only one. Arbitrageurs factor transaction costs into their decision to enter or not enter a position. Unlike in traditional index-hugging strategies, commissions are a necessary evil. For a traditional investment manager the alternative to entering a new position is to continue to hold an existing one. A trade will be made based on the likelihood of relative outperformance. For an arbitrageur the alternative to entering a position is holding cash, since the short duration to closing of a merger means that there is always a deal that has just closed. For all these reasons, frequent trading is not a valid criticism against merger arbitrage.

Taxes are more valid as a concern. Merger arbitrage for the most part generates short-term capital gains. But as with transaction costs, the tax effect of merger arbitrage is a side effect of the strategy that cannot be avoided. Mergers close on a short time frame, and it is impossible to devise a merger arbitrage strategy that invests for the long run. An investor who seeks the risk profile associated with merger arbitrage must be willing to incur the tax effects of the strategy. Fortunately, many investors in merger arbitrage vehicles are tax-exempt institutions for whom the tax effects are irrelevant.

BIDDING WARS AND HOSTILE BIDS

Hostile bids and bidding wars can be among the most profitable mergers, yet they also present the most risk of loss. The risk of noncompletion is very high.

Hostile bids occur when a potential buyer wants to acquire an unwilling target. Through the end of 2014 the largest hostile transaction ever was the failed attempt by Pfizer Inc. to acquire AstraZeneca plc during the second quarter of 2014 for \$116 billion. In contrast, the second largest hostile transaction to date is also the largest successful one: the Eur72 billion hostile acquisition of ABN AMRO Holding NV by a consortium led by several other banks, which beat a lower bid by Barclays Bank. In addition to being hostile, this deal was also a bidding war. Its timing was unfortunate, as it closed in October 2007, just prior to the financial crisis, during which

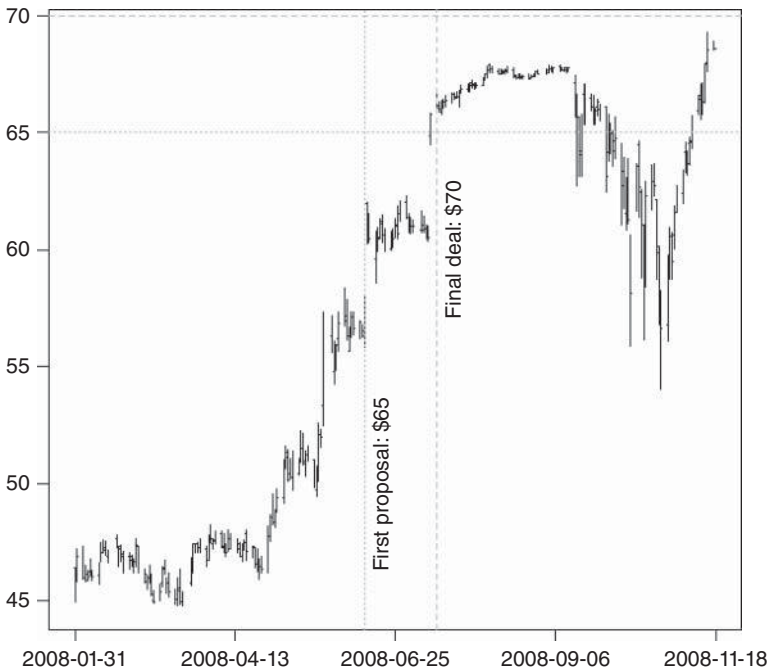


FIGURE 5.9 Stock Price of Anheuser-Busch Cos.

some of the banks in the acquiring consortium had to be bailed out by their governments. However, not all hostile transactions in a crisis need to end in disaster. A \$50 billion bid by Belgian-Brazilian beverage giant InBev SA for Anheuser-Busch Cos. (see Figure 5.9) in June 2008, in the middle of the crisis, ranks as the third largest hostile transaction of all time and has been very profitable for InBev. Table 5.7 lists the 20 largest completed hostile transactions worldwide. The total universe of hostile transactions is very limited. Through the end of 2014, Mergerstat's database contained a mere 456 hostile transactions worldwide with an equity value in excess of \$250 million, of which only 131 were completed. While hostile transactions attract much media coverage they represent only 1 percent of all public company M&A activity. The largest hostile transaction of all time was only proposed but did not occur. It was the Pfizer Inc.'s proposal in April 2014 to acquire AstraZeneca plc for almost \$117 billion, which was abandoned due to political resistance in the United Kingdom.

InBev first bid \$65 per share on June 11, valued at \$46 billion. Anheuser-Busch rejected the bid and announced a cost-cutting initiative instead. InBev threatened to take its proposal directly to shareholders.

TABLE 5.7 The World's 20 Largest Completed Hostile Takeover Transactions, through Year-End 2014

Announcement	Acquirer	Target	Equity Value (\$ millions)
5/29/2007	Consortium of Banks, including Royal Bank of Scotland, Fortis, Santander	ABN AMRO Holding NV	99,674.60
11/4/1999	Pfizer Inc.	Warner-Lambert Co.	93,875.60
6/11/2008	InBev SA	Anheuser-Busch Cos., Inc.	50,613.00
7/21/2008	Roche Holding AG	Genentech, Inc.	44,291.30
2/20/1999	Ing. C. Olivetti & Co. SpA	Telecom Italia SpA	30,237.60
1/27/2006	Mittal Steel Co. NV	Arcelor SA	29,257.30
8/29/2010	Sanofi-Aventis SA	Genzyme Corp.	19,327.90
9/7/2009	Kraft Foods, Inc.	Cadbury Ltd.	19,111.40
4/7/2006	Grupo Ferrovial SA	BAA Plc	17,969.40
1/4/2010	Novartis AG	Alcon, Inc.	11,684.40
3/29/2012	GDF SUEZ SA	International Power plc	10,194.80
10/31/2005	Barrick Gold Corp.	Placer Dome, Inc.	10,187.30
10/18/1995	Wells Fargo & Co.	First Interstate Bancorp	10,140.60
6/6/2003	Oracle Corp.	PeopleSoft, Inc.	9,957.30
10/18/2004	Harmony Gold Mining Co. Ltd.	Gold Fields Ltd.	9,149.50
2/21/2014	Volkswagen AG	SCANIA AB	9,129.10
9/13/1993	Viacom, Inc.	Paramount Communications, Inc.	9,087.80
2/22/2002	Northrop Grumman Corp.	TRW, Inc.	7,645.40
8/3/2005	Compagnie de Saint-Gobain SA	BPB Plc	6,855.50
11/13/2000	Weyerhaeuser Co.	Willamette Industries, Inc.	6,098.30

Source: Mergerstat.

This would most likely have meant a tender offer or a proxy fight to obtain control of the board. For a while, it looked like Mexico's Grupo Modelo might enter the race to acquire Anheuser-Busch. This would have turned the hostile bid into a full-fledged bidding war. By late June, InBev had secured financing for its bid and indicated that it would go forward with its hostile bid. However, on July 11, it became clear that both firms had

entered friendly negotiations. Three days later, both companies announced a friendly merger for \$70 per share.

It can be seen from the stock chart that Anheuser-Busch traded below the \$65 offered by InBev. In other cases, the stock of the target trades above the offer price because market participants expect that the final price will be higher yet. The potential loss on a hostile transaction is even large in those cases. Many arbitrageurs stay away from hostile transactions.

Few hostile bids go as smoothly as the Anheuser-Busch merger. The sheer size of the transaction, almost \$50 billion, limited the circle of other acquirers that were large enough to make a serious bid. This explains why the stock traded at a discount to the \$65 offer. A serious risk is also the possible abandonment of the hostile bid by the hopeful buyer once it faces heavy opposition. Some firms shun headlines that make them appear as ruthlessly aggressive corporate raiders.

It is a coincidence that the fourth largest hostile bid also occurred during the financial crisis. Roche Holding reduced its bid for Genentech from \$89 to \$86.50 on January 30, 2009, while equity markets were in turmoil. Clearly, Roche acted opportunistically, as analysts published price targets of as much as \$110 for an acquisition. As Figure 5.10 demonstrates, Genentech's stock had tracked the equity market very closely subsequent to the first proposal in July 2008. It was rational for Roche to take advantage of the situation. However, with Genentech continuing to object, Roche raised its bid on March 6 to \$93, and signed a merger agreement for \$95 per share on March 12, 2009, three days after the S&P 500 index fell to its often-cited crisis low of 666 and six days before the Federal Reserve announced a \$1 trillion expansion of its program of quantitative easing, also known as QE1. The outcome fell short

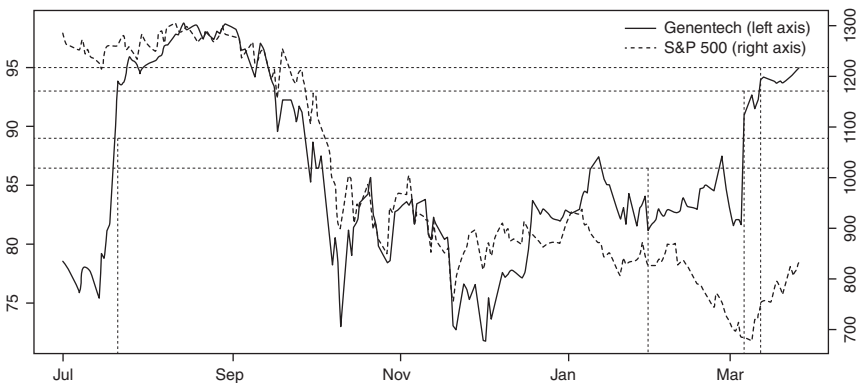


FIGURE 5.10 Stock Price of Genentech and the S&P 500 Index

of expectations of a merger between \$100 and \$110. Because Roche owned a majority of 55.7 percent of the shares of Genentech, it was not realistic to assume that another bidder would enter the race and launch a bidding war. Roche would have simply refused to tender its shares and thus would have frustrated such a deal.

The situation had been different in the Anheuser-Busch merger just a few months earlier. Had Grupo Modelo become involved in the bidding, a bidding war would have broken out. Bidding wars come about for a variety of reasons. Sometimes they are the result of an unwilling target that seeks a white knight. This is a buyer who is friendly to management. At other times, a target may have a unique strategic value that its competitors do not want to see fall into the hands of each another.

One of the most profitable bidding wars in recent history was the 2010 battle over cloud storage company 3PAR between Dell and Hewlett-Packard. Figure 5.11 shows the evolution of the initial \$18 bid by Dell to the eventual acquisition by HP for \$33. It can be seen how large increases initially become incremental as the bidding war progresses.

The term *bidding war* is more graphic than what happens when the competing parties confront each other. Although the press has a tendency to point to “battles heating up,” the actual verbiage rarely becomes hostile. Typical for the calmness in a bidding war is the HP press release when it upped its bid to \$27 on August 26, 2010:

“Our revised proposal offers superior value to 3PAR’s shareholders, while maintaining our disciplined approach to only pursuing acquisitions that we believe will strengthen our portfolio and create long-term value for our shareholders,” said Dave Donatelli, executive vice president and general manager, Enterprise Servers, Storage and Networking, HP. “Not only is our offer superior to Dell’s proposal, HP remains uniquely positioned to execute on this combination given the number of synergies between the two companies.”

Hewlett Packard press release, August 26, 2010

Bidding wars in stock-for-stock mergers present a special risk for arbitrageurs. Most of the time, it is best to stay out of these transactions until the dust has settled. The problem is that an arbitrageur needs to establish a long/short position between a target and a bidding acquirer. However, it is not clear which of the bidders to short. The highest bidder changes in each round of bidding. When an arbitrageur is short one bidder and another wins, there could be a short squeeze on the bidder that was shorted. Like hostile bids, bidding wars are too speculative for most arbitrageurs. It is best to stay away from bidding wars, or build small positions carefully with limited exposure and partial hedging.



FIGURE 5.11 Bidding War over 3PAR

A new development in hostile transactions occurred in the year 2014 when Valeant Pharmaceuticals teamed up with activist investor Bill Ackman's Pershing Square to launch a hostile cross border bid for Allergan Inc. This transaction will be discussed in more detail in Chapter 13. Whether the pairing of a hostile acquirer with an activist investor is a one-time event or will be repeated in the future remains to be seen.

Hostile transactions are more prevalent in Europe than in the United States. This may be due to the existence of poison pills in the United States that make it harder for hostile acquirers to succeed and hence discourage acquirers that might otherwise go hostile. In contrast, many countries in Europe ban poison pills. In addition, the U.K. Takeover Code and many of its continental European variations severely limits management's ability to frustrate a hostile approach.

CHINESE COMPANIES

Unfortunately, Chinese companies merit a distinct discussion as one particular risk in merger arbitrage. After going public in the United States and other Western capital markets when demand by Western investors for investment opportunities in China was high, valuations in China and Hong Kong both in public and private markets have since risen to a point that many Chinese companies are rethinking their listing in the West. A popular tactic is to take a company listed in the West private and list it through an IPO in China or Hong Kong shortly thereafter.

Unfortunately, in recent years, numerous Chinese companies have collapsed after the discovery of fraudulent activities. In some cases, the businesses that the companies were claiming to be operating are alleged to have not even existed. A prominent and, so far, the largest case was Sino-Forest Corporation, a large operator of forest plantations listed in Canada. At its peak it had a market capitalization of C\$6.2 billion. Some arbitrageurs started taking a speculative interest in the company after reports in 2007 that Macquarie Bank and CVC Asia Pacific may have considered a buy-out but decided not to proceed. The stock declined, which some speculatively minded arbitrageurs deemed an attractive entry point for potential future M&A.

During June 2011, a well-known short seller that had made a name for himself in exposing other Chinese corporate frauds, Carson Block of research firm Muddy Waters, published a report alleging that the company's assets were overvalued and that some of them did not even exist. After a lengthy investigation by the board of directors into the allegations, the company ended up filing for bankruptcy protection.

As a result of Sino-Forest and numerous other frauds, which are facilitated by the economic secrecy of the government of China, most arbitrageurs do not invest in Chinese companies listed in the West. Mergers involving these firms generally trade at substantially wider spreads than typical merger arbitrage events. At the time of this writing, most merger arbitrage opportunities have annualized returns between 4 and 6 percent, while Chinese companies listed in the West have merger arbitrage spreads well above 10 percent.

Deal Structures: Mergers and Tender Offers

The preceding chapters mostly ignored the structure of the deal. When the timing of the closing of a merger was discussed, I alluded briefly to the difference in speed with which tender offers or mergers are completed. Differences between tender offers and mergers run deeper, and this chapter describes the structure of mergers in more detail.

A merger is a structure where two companies are integrated into a single entity. The buyer is normally the surviving corporation, and the target ceases to exist as it is integrated into the buyer. Target shareholders receive cash, stock of the acquirer, or a mix of both. The acquirer buys the target firm directly.

In contrast, in a tender offer, the acquirer buys the shares of the target firm from the target's shareholders. Therefore, a second step is needed to complete the transaction: a merger in which the target is merged into the acquirer.

Both structures, mergers and tender offers, are used in all major jurisdictions, although their names in specific implementations vary. Table 6.1 shows the nomenclature for various countries. In Canada, statutory mergers are called *amalgamations*, whereas a scheme of arrangement is a *plan* of arrangement. Despite the linguistic differences, both are mergers. Table 6.1 shows which types of transactions are available in different common law jurisdictions.

Readers should be aware that terms such as *buyout*, *merger*, or *acquisition* that are frequently used in the press do not represent actual transaction structures. What a press article calls a merger in fact might have been structured as a tender offer. Buyouts, mergers of equals, purchases, or acquisitions are not transaction structures at all. They are common terminology—shortcuts that seeks to describe the rationale underlying the transaction rather than its true legal form.

The dichotomy between mergers and tender offers can be found in other jurisdictions around the world that do not have a common-law heritage. The common denominator is that in a tender offer a buyer makes a public offer

TABLE 6.1 Mergers and Tender offers in several common law jurisdictions

		Canada	UK	Australia	Hong Kong	US
Mergers	Statutory Merger	✓ (Amalgamation)	×	×	×	✓
	Scheme of Arrangement	✓ (Plan of Arrangement)	✓	✓	✓	×
Tender Offers		✓	✓	✓	✓	✓

to acquire shares. This offer may or may not pertain to the totality of the outstanding shares. At the completion of a tender offer, the acquirer usually owns fewer than all outstanding shares and has to find a solution to deal with the minority shareholders. At this point, the details differ substantially from country to country.

In contrast, in a merger, the acquirer gains control of the entire target company. Minority shareholders are eliminated and paid out by the force of the law.

The remainder of this chapter will illustrate the differences between mergers and tender offers.

MERGERS

Mergers in the United States differ from those in all other jurisdictions that I am familiar with by being statutory mergers: State laws define how a merger has to be effected, and it becomes effective through the filing of the requisite documentation with the relevant authorities, such as the Secretary of State's Corporation Office in the case of a Delaware corporation. In contrast, in all non-U.S. jurisdictions, mergers become effective by court order. In these countries, a judge has the final say in approving a merger. In the United Kingdom, for example, at least two court meetings are required before a scheme of arrangement can be completed, whereby the last court meeting sanctions the scheme.

In a direct merger (see Figure 6.1), the target firm merges directly into the acquirer. Shareholders of the target receive the merger consideration. To the extent that they receive stock of the acquirer, they become shareholders of the buyer. Direct mergers are not very popular because they require the approval of the shareholders of both target and acquirer. Therefore, a more common merger structure is an indirect merger in which the acquirer forms

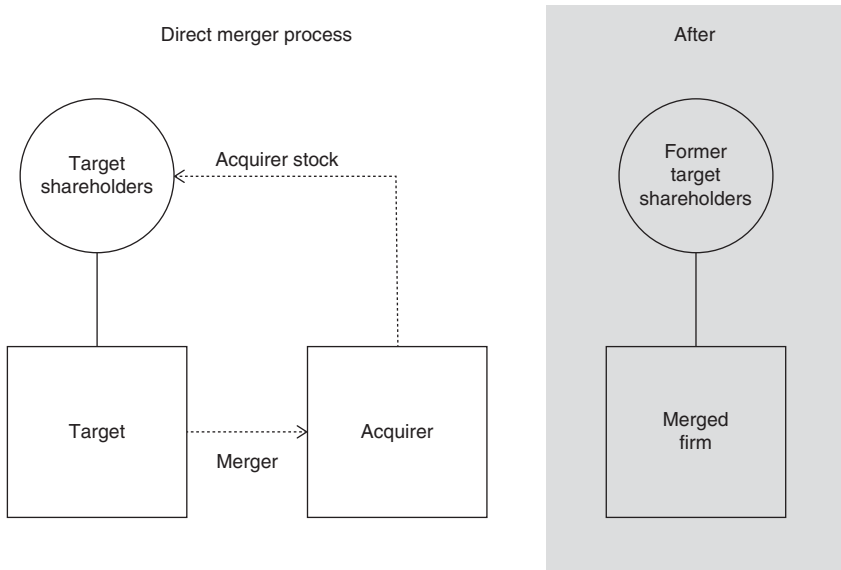


FIGURE 6.1 Direct Merger

a wholly owned subsidiary that merges with the target. These structures involve three firms and are known as triangular mergers. The merger subsidiary (or merger sub) is a corporation that is created only for the purpose of effecting the merger.

Two types of triangular mergers are possible. In a forward triangular merger, the merger sub merges with the target, and the merger sub is the surviving entity, as shown in Figure 6.2(a). In a reverse triangular merger shown in Figure 6.2(b), the target is the surviving corporation. Reverse triangular mergers are by far the most favored transaction structures.

The choice between direct mergers or the two types of triangular mergers is driven by tax and legal considerations. In a direct merger, the buyer acquires all assets and also all liabilities of the target.

When the target is the surviving corporation, all its contracts and licenses are maintained. This can be particularly important when complex licensing applications have to be maintained in heavily regulated industries, such as financial services, air transportation, or casinos. If the target company is merged out of existence through a direct or forward triangular merger, all contracts and licenses must be assigned to the surviving corporation. Similarly, debt may not have to be refinanced when the borrower continues to

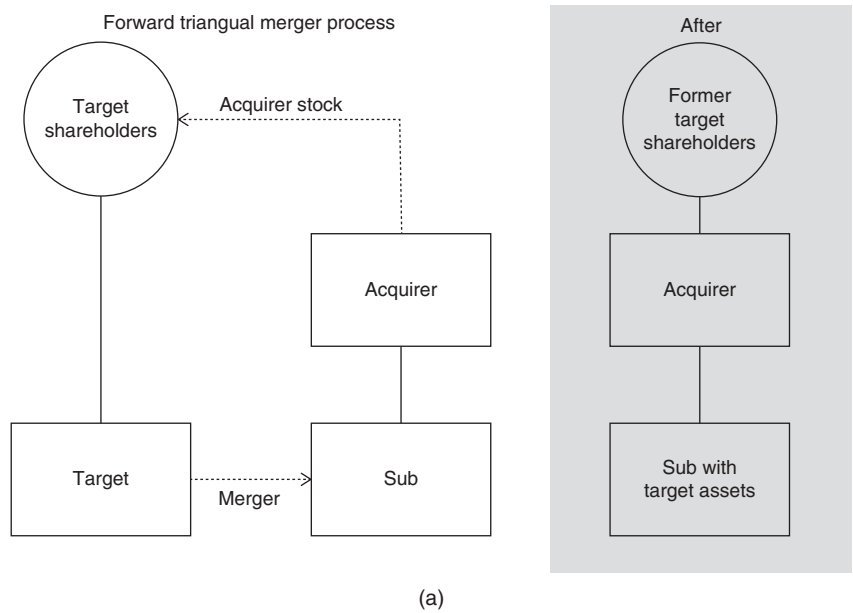


FIGURE 6.2(a) Forward Triangular Merger

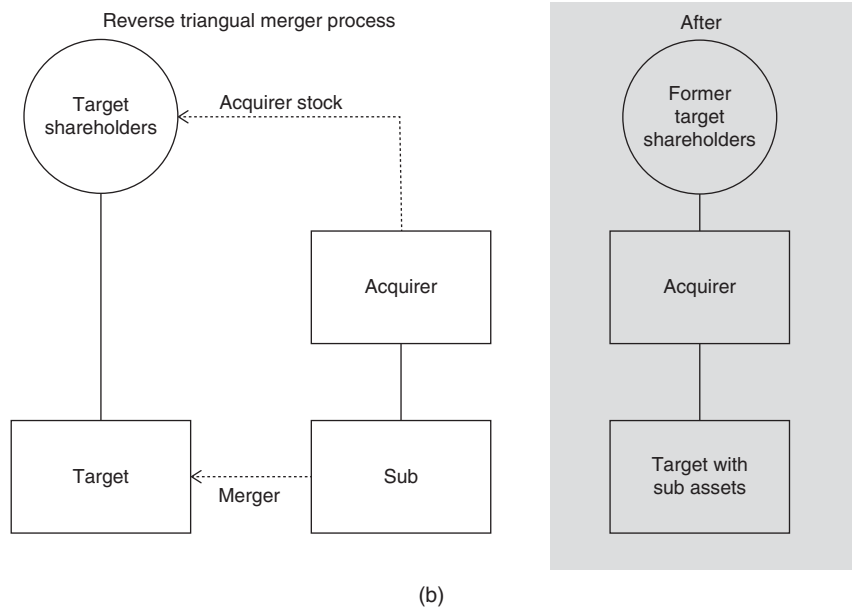


FIGURE 6.2(b) Reverse Triangular Merger

exist. Assignment of contracts and refinancing of debt can take a considerable amount of time for larger firms. A recent case in Delaware¹ confirmed the long-held view that a reverse triangular merger does not constitute an assignment of contract, so that this deal structure will remain the structure of choice for the future.

As a general principle in all countries known to the author, stock-for-stock mergers are tax free. In mixed cash and stock mergers, the stock portion is tax free. The cash portion of the merger is referred to as *boot*. When shareholders receive new shares for their old shares they have continuity of ownership and it would not make sense to impose a tax. However, when shareholders receive cash and no longer have economic exposure to the business, taxation as a sale is reasonable. As with all tax matters, the devil is in the detail, and mergers can become taxable under circumstances that would appear to make them nontaxable.

In the United States, the tax treatment of mergers is governed by Section 368 of the Internal Revenue Code. For reverse triangular mergers, the stock portion is tax free only if it represents not less than 80 percent of the consideration received. In a forward triangular merger, only 50 percent of the consideration needs to be stock. In a direct merger, any combination of stock and cash or other property can be used to maintain the tax-free status of the stock portion. The relevant date for the determination is the closing date of the merger.

Even if merging companies chose a triangular merger structure, they can combine later into a single firm. Such later combinations, known as upstream mergers, are subjected to the tax treatment as if they were completed at the time of the original transaction. Therefore, it is possible to perform a reverse triangular merger with a cash consideration of more than 20 percent if it is followed shortly by an upstream merger. The two transactions will be collapsed into one by the Internal Revenue Service and considered a direct merger for tax purposes.

Arbitrageurs can identify the type of merger from the disclosures in the Securities and Exchange Commission (SEC) filings. Exhibit 6.1 is an excerpt from the merger agreement between priceline.com and KAYAK Software Corporation, which was acquired for \$40 in cash through a forward triangular merger.

Other than in the merger agreement, descriptions of the type of merger of a given transaction can be found also in the proxy statement. Exhibit 6.2 shows excerpts of the proxy statement of the acquisition of H. J. Heinz Company by Berkshire Hathaway and private equity firm 3G Capital. This merger was structured as a reverse triangular merger. H. J. Heinz Company was acquired for \$40 in cash.

EXHIBIT 6.1 DESCRIPTION OF A FORWARD TRIANGULAR MERGER IN THE MERGER AGREEMENT BETWEEN KAYAK SOFTWARE CORP AND PRICELINE.COM

This AGREEMENT AND PLAN OF MERGER, dated as of November 8, 2012 (this “**Agreement**”), is by and among KAYAK Software Corporation, a Delaware corporation (the “**Company**”), priceline.com Incorporated, a Delaware corporation (“**Parent**”), and Produce Merger Sub, Inc., a Delaware corporation and a wholly-owned subsidiary of Parent (“**Merger Sub**,” with the Company and Merger Sub sometimes being hereinafter referred to, together, as the “**Constituent Corporations**”).

[...]

ARTICLE I**THE MERGER; CLOSING; EFFECTIVE TIME**

1.1. The Merger. Upon the terms and subject to the conditions set forth in this Agreement, at the Effective Time, the Company shall be merged with and into Merger Sub and the separate corporate existence of the Company shall thereupon cease. Merger Sub shall be the surviving corporation in the Merger (sometimes hereinafter referred to as the “**Surviving Corporation**”), and the separate corporate existence of Merger Sub, with all of its rights, privileges, immunities, powers and franchises, shall continue unaffected by the Merger. The Merger shall have the effects specified in the Delaware General Corporation Law (the “**DGCL**”).

Source: Form 8-K of KAYAK Software Corp filed on November 9, 2012.

EXHIBIT 6.2 REVERSE TRIANGULAR MERGER IN THE ACQUISITION OF H. J. HEINZ COMPANY BY BERKSHIRE HATHAWAY AND 3G CAPITAL

This AGREEMENT AND PLAN OF MERGER (this “**Agreement**”), dated as of February 13, 2013, is entered into by and among H. J. Heinz Company, a Pennsylvania corporation (the “**Company**”), Hawk Acquisition Holding Corporation, a Delaware corporation (“**Parent**”), and Hawk Acquisition Sub, Inc., a Pennsylvania corporation and a wholly owned subsidiary of Parent (“**Merger Sub**”).

[...]

Section 1.01. The Merger. Upon the terms and subject to the conditions set forth in this Agreement and in accordance with the applicable provisions of the Pennsylvania Business Corporation Law of 1988 (the “PBCL”), at the Effective Time, Merger Sub shall be merged with and into the Company and the separate corporate existence of Merger Sub shall thereupon cease. The Company shall be the surviving corporation in the Merger (the “Surviving Corporation”) and shall continue its corporate existence under Pennsylvania law as a wholly owned subsidiary of Parent.

Source: DEFM14A of H. J. Heinz Company filed on March 27, 2013.

An amalgamation is the Canadian equivalent of a statutory merger. Amalgamations are used mostly by private companies and small public companies. One such rare occurrence was the 2011 acquisition of Distinction Group, Inc. by private equity firm Birch Hill. Even though to date this is the largest Canadian public company to have been acquired through an amalgamation, the equity value was only C\$130 million. This illustrates that this transaction type is rare and used mostly by smaller companies.

AMALGAMATION

If approved by the Shareholders and if the conditions set out in the Acquisition Agreement are either satisfied or waived, the Amalgamation will be effected in accordance with the Amalgamation Agreement, and each Shareholder [...] will receive one Amalco Redeemable Share for each Share held immediately prior to the Amalgamation. Each Amalco Redeemable Share will then immediately be redeemed for \$4.50 payable in cash by Amalco (the “Redemption Price”), which payment is expected to be made shortly after the Effective Date, which is expected to be on or about January 1, 2012.

[...]

Pursuant to the Amalgamation Agreement, the stated capital account in the records of Amalco shall be determined as follows:

- a) an amount equal to \$4.50 for each Amalco Redeemable Shares issued in accordance with the Amalgamation Agreement, corresponding to the Redemption Price, shall be added to the stated

capital account maintained by Amalco in respect of the Amalco Redeemable Shares;

[...]

If the Amalgamation is approved by the Shareholders and the other conditions set out in the Acquisition Agreement are either satisfied or waived, GDI, Bidco and Holdco will file the Articles of Amalgamation giving effect to the Amalgamation. Under the terms of the Amalgamation Agreement, GDI, Bidco and Holdco will amalgamate to form Amalco, the Shareholders [...] will receive Amalco Redeemable Shares, which will then immediately be redeemed for the Redemption Price.

[...]

Pursuant to the Amalgamation Agreement, at the Effective Time on the Effective Date:

- a) the Amalgamation of GDI, Bidco and Holdco and their continuance as Amalco shall become effective;
- b) the property of each of GDI, Bidco and Holdco continues to be the property, of Amalco;
- c) Amalco continues to be liable for the obligations of each of GDI, Bidco and Holdco;
- d) an existing cause of action, claim or liability to prosecution is unaffected;
- e) a civil, criminal or administrative action or proceeding pending by or against any of GDI, Bidco or Holdco may be continued to be prosecuted by or against Amalco; and
- f) a conviction against, or ruling, order or judgement in favour of or against, any of GDI, Bidco or Holdco may be enforced by or against Amalco.

Source: Distinction Group Management information circular, filed on SEDAR on December 1, 2011.

As an aside the term *amalgamation* is also used in Indian mergers. However, these transactions are subject to court supervision and hence are more akin to a scheme of arrangement than a Canadian amalgamation. Terminology can be confusing when the true meaning is lost in translation.

SCHEME OF ARRANGEMENT

A scheme of arrangement, or plan of arrangement in Canada, is an intermediary structure between a merger and a tender offer that is in widespread use in countries that have adopted a U.K.-style corporate law. In a scheme the share ownership is transferred to the buyer by court order and shareholders receive the agreed upon merger consideration, which can be stock or cash. For the court to authorize the transfer of ownership, most jurisdictions require the approval by more than a majority of shareholders. In Canada, the support of two-thirds of shareholders is required, whereas in the United Kingdom and Australia that number is three-quarters.

Unlike in a merger described in the previous section, the target company does not cease to exist. Its ownership is merely transferred by court order. Exhibit 6.3 illustrates this in an Australian scheme of arrangement through which Dai-ichi Life Insurance acquired Tower Australia.

EXHIBIT 6.3 SCHEME OF ARRANGEMENT BETWEEN TOWER AUSTRALIA AND THE DAI-ICHI LIFE INSURANCE COMPANY

5.2 Transfer of Target Shares

On the Implementation Date, but subject to Bidder making (or procuring) the payment of the Scheme Consideration for the Target Shares in the manner contemplated by the Deed Poll, and Bidder having provided Target with written confirmation thereof:

- a) all the Target Shares, together with all rights and entitlements attaching to those shares as at the Implementation Date, will be transferred to Bidder or Bidder Nominee without the need for any further act by any Scheme Participant (other than acts performed by Target or its directors and officers as attorney and agent for the Scheme Participants under this Scheme) by:
 - (i) Target delivering to Bidder a duly completed Share Scheme Transfer executed on behalf of the Scheme Participants for execution by Bidder or Bidder Nominee; and
 - (ii) Bidder delivering to Target for registration the Share Scheme Transfer duly executed by Bidder or Bidder Nominee; and
- b) Target will, as soon as practicable following receipt of the duly executed Share Scheme Transfer from Bidder under clause 5.2(a)(ii), enter the name and address of Bidder or Bidder Nominee in the Register in respect of the Target Shares.

5.3 Entitlement to Scheme Consideration

On the Implementation Date, in consideration for the transfer of the Target Shares to Bidder or Bidder Nominee, each Scheme Participant will be entitled to receive the Scheme Consideration in respect of each of their Target Shares in accordance with clause 6.

Source: Scheme Booklet of Tower Australia, dated March 11, 2011.

In the United Kingdom, schemes of arrangement have a tax advantage over takeovers because no stamp tax is due if the scheme is structured so that shares are canceled rather than transferred. At a current rate of 0.5 percent it is clear that tax considerations favor schemes over takeover offers. In order to avoid incurring the stamp tax U.K. schemes reduce the outstanding capital of the target firm. Exhibit 6.4 illustrates this mechanism in the acquisition of soft drink company Britvic plc by A.G. Barr p.l.c. Note that in a Scheme of Arrangement under English law shares of the target company are canceled, whereas in the Australian example above they were transferred to the buyer. For this reason, English schemes of arrangement are sometimes referred to as capital reduction schemes. In fact, a scheme of arrangement is an instrument that can be used beyond corporate mergers. Capital reductions through schemes are also frequently employed in credit restructurings.

EXHIBIT 6.4 SCHEME OF ARRANGEMENT FOR THE ACQUISITION OF BRITVIC PLC BY A. G. BARR PLC

“Scheme Shares” (i) the Ordinary Shares in issue at the date of this Scheme; (ii) any Ordinary Shares issued after the date of this Scheme and before the Voting Record Time; and (iii) any Ordinary Shares issued at or after the Voting Record Time and before the Scheme Record Time on terms that the holder thereof shall be bound by this Scheme, or in respect of which the original or any subsequent holders thereof shall have agreed in writing to be bound by this Scheme
[...]

1. Cancellation of the Scheme Shares

- 1.1 The capital of the Company shall be reduced by cancelling and extinguishing the Scheme Shares.

1.2 Subject to and forthwith upon the said Reduction of Capital taking effect, the reserve arising in the books of account of the Company as a result of the Reduction of Capital shall be capitalized and applied in paying up in full at par such number of new Ordinary Shares as shall be equal to the number of Scheme Shares cancelled pursuant to Clause 1.1, which shall be allotted and issued credited as fully paid to A.G. Barr and/or its nominee(s).

2. Consideration for the cancellation of the Scheme Shares

2.1 In consideration for the cancellation of the Scheme Shares and the allotment and issue of the new Ordinary Shares as provided in Clause 1, A.G. Barr shall (subject to the remaining provisions of this Clause 2 and to Clause 4) allot and issue to the holders of Scheme Shares (as appearing in the register of members of the Company at the Scheme Record Time):

For each Scheme Share 0.816 A.G. Barr Shares

Source: Scheme Circular published by Britvic plc, dated December 12, 2012.

TENDER OFFERS

In a tender offer, the buyer purchases the target indirectly. The buyer asks the shareholders of the target company to tender their shares into the offer. Most tender offers are friendly and are done after an agreement has been negotiated between the target and the acquirer. However, because no agreement between the target and the acquirer is necessary, a tender offer is the vehicle used in hostile acquisitions. The acquirer simply asks the shareholders to tender their shares directly to the acquirer. The transaction takes place between shareholders and the acquirer, so that it can occur even when the target firm is opposed to the acquisition. In such a hostile transaction, the acquirer replaces the board of the target once it has sufficient shares and then acquires control.

The advantage of a tender offer is the speed with which it can be executed and the absence of a shareholder vote with the associated proxy solicitation. Shareholders vote with their feet in that they can tender their shares or not.

It is impossible to obtain full control of a public company with a shareholder base of thousands, possibly millions, of small holders through a tender offer. There will always be some shareholders who do not tender. This is why tender offers are structured as two-step transactions:

- Step 1. The acquirer seeks to get as many shares as possible in the tender offer.
- Step 2. Once a certain threshold is reached, the acquirer squeezes out the remaining shareholders through a short-form merger.

A short-form merger allows the acquirer to cash out remaining shareholders if it holds more than a threshold percentage of a firm. The level of the threshold depends on the state of incorporation and lies between 85 and 95 percent. In Delaware, it is 90 percent.

However, not all tender offers are followed by an immediate squeeze-out of minority shareholders. In the United States, an immediate squeeze-out is standard procedure but in Germany, for example, a domination and profit sharing agreement is signed after the acquirer gains control, and a squeeze-out may not occur until years later, if ever. This is discussed in Chapter 8.

Even in the United States, there can be exceptions from an immediate squeeze-out. In the acquisition of broker/dealer GFI Group by BGC Partners, GFI acquired a 56 percent stake in GFI through a tender offer that completed on February 27, 2015. Management, which owned 39 percent of the shares, had committed to tendering its shares to BGC at a later time after completion of the tender offer. In a highly unusual step, BGC started taking control of GFI Group and implementing synergies, such as the combination of the two firms' back-office operations, right after the completion of the tender offer and prior to squeezing out the minority shareholders.

Tender offers often are extended to allow shareholders who have not yet tendered to do so when an acquirer does not reach the requisite ownership level for the short-form merger. As the offer is extended, the shareholder base turns over, and more arbitrageurs will hold stock in the target. Arbitrageurs are more likely to tender their shares than other investors.

In the United States, if several tender offer extensions still cannot get the acquirer to the desired percentage, it is possible to use a top-up option. However, this option must be included in the tender offer documentation and cannot be adopted retroactively: The target agrees to issue sufficient shares to the buyer to bring the ownership to the level where a short-form merger can be completed. The number of shares that must be issued can be

calculated in the following manner:

$$T = \frac{P \times N - O}{1 - P} \quad (6.1)$$

where

T is the number of shares to be acquired through the top-up option.

N is the total number of outstanding shares.

O is the number of shares owned.

P is the percentage required by state law to perform a short-form merger.

A problem with the top-up option is that a large number of shares must be issued to increase the ownership of the acquirer. This is possible only if sufficient shares have been authorized. In addition, if more than 20 percent of the shares are issued, most exchanges require shareholder approval. Arbitrageurs can estimate the probability of completion of the deal from the number of shares that must be issued. Top-up options are relatively new instruments that have become common in the last decade only. They have not yet been tested extensively in court. An example of the top-up option from a merger agreement is shown in Exhibit 6.5.

EXHIBIT 6.5 TOP-UP OPTION IN THE MERGER OF BURGER KING WITH 3G CAPITAL

Section 1.03 Top-Up.

- a) Top-Up. The Company hereby grants to Sub an irrevocable right (the "Top-Up"), exercisable on the terms and conditions set forth in this Section 1.03, to purchase at a price per share equal to the Offer Price that number of newly issued, fully paid and nonassessable shares of Company Common Stock (the "Top-Up Shares") equal to the lowest number of shares of Company Common Stock that, when added to the number of shares of Company Common Stock directly or indirectly owned by Parent and Sub at the time of the Top-Up Closing (after giving effect to the Offer Closing), shall constitute one share more than 90% of the shares of the Company Common Stock outstanding immediately after the issuance of the Top-Up Shares; provided, however, that the Top-Up may not be exercised to purchase an amount of Top-Up Shares in excess of the number of shares of Company Common Stock authorized and

unissued (treating shares owned by the Company as treasury stock as unissued) and not reserved for issuance at the time of exercise of the Top-Up. The Top-Up shall be exercisable only once, in whole but not in part.

- b) Exercise of Top-Up; Top-Up Closing. If there shall have not been validly tendered and not validly withdrawn that number of shares of Company Common Stock which, when added to the shares of Company Common Stock owned by Parent and its Affiliates, would represent at least 90% of the shares of the Company Common Stock outstanding on the Offer Closing Date, Sub shall be deemed to have exercised the Top-Up and on such date shall give the Company prior written notice specifying the number of shares of Company Common Stock directly or indirectly owned by Parent and its Subsidiaries at the time of such notice (giving effect to the Offer Closing). The Company shall, as soon as practicable following receipt of such notice (and in any event no later than the Offer Closing), deliver written notice to Sub specifying, based on the information provided by Sub in its notice, the number of Top-Up Shares. At the closing of the purchase of the Top-Up Shares (the “Top-Up Closing”), which shall take place at the location of the Merger Closing specified in Section 2.02, and shall take place simultaneously with the Offer Closing, the purchase price owed by Sub to the Company to purchase the Top-Up Shares shall be paid to the Company, at Sub’s option, (i) in cash, by wire transfer of same-day funds, or (ii) by (x) paying in cash, by wire transfer of same-day funds, an amount equal to not less than the aggregate par value of the Top-Up Shares and (y) executing and delivering to the Company a promissory note having a principal amount equal to the aggregate purchase price pursuant to the Top-Up less the amount paid in cash pursuant to the preceding clause (x) (the “Promissory Note”). The Promissory Note (i) shall be due on the first anniversary of the Top-Up Closing, (ii) shall bear simple interest of 5% per annum, (iii) shall be full recourse to Parent and Sub, (iv) may be prepaid, in whole or in part, at any time without premium or penalty, and (v) shall have no other material terms. At the Top-Up Closing, the Company shall cause to be issued to Sub a certificate representing the Top-Up Shares.

Source: Merger agreement filed on Form 8K with the SEC on September 3, 2010.

More recently, the use of top-up options has declined after the Delaware legislature changed DGCL to expedite the closing of tender offers. The merger agreement can now specify that section 251(h) applies, and in that case, the acquirer only need 50 percent plus one share in order to close a merger following a tender offer. The parties are at liberty to negotiate a threshold that is higher than 50 percent. The result is that while in the year 2008 almost all tender offers had a top-up option, this has now become practically disused in agreements governed by Delaware law.

COMPARISON OF MERGERS AND TENDER OFFERS

The speed of completion works in favor of tender offers, which are much faster to complete than mergers. The SEC reviews tender offer documents while the offer is open; in a merger, the SEC must approve the merger's proxy materials before they can be distributed to shareholders. A tender offer must be open for as little as 20 days, whereas the advance-notice period for the shareholder meeting to approve a merger is at least 30 days. Further time may be required if the buyer must register new shares. Moreover, the waiting period under the Hart-Scott-Rodino Act (see Chapter 12) for a cash tender offer is shortened to 15 days compared to 30 days in a merger, which makes it possible to close the transaction earlier. All these facts suggest that the default acquisition method should be a tender offer.

The difference in speed at which mergers and tender offers can be completed can be seen in statistics of actual transactions. Table 6.2 shows the timing of mergers and tender offers in the years from 1980 to 2005. It can be seen that for public targets, tender offers always close faster than mergers. For private targets, however, mergers are faster. This difference reflects the delay that public companies experience due to the filing of proxy statements. Private companies do not have to go through an SEC review of proxy statements and therefore can close their transactions faster.

A corollary of the increased speed of the tender offer is the lower likelihood of the emergence of a competing bid from another buyer. A potential acquirer needs a certain amount of time to conduct due diligence, and the time frame of a tender offer is simply too short for thorough research. In addition, if the competing bidder needs to raise additional capital to make the acquisition, it is unlikely to find sources of capital quickly enough to beat the original tender offer's deadline. This is definitely a plus from the acquirer's point of view; for investors and arbitrageurs, however, it reduces the probability of getting a higher value for their shares.

Shareholder acceptance is easier to obtain in a tender offer than in a merger. In a merger, shareholders can vote if they owned shares on the record

TABLE 6.2 Timing in Mergers and Tender Offers, 1980–2005

	Public Status		No. of Observations	Trading Days from Initial Control Bid to Effective Date ^(*)			
	Target	Bidder		Mean	Median	Quartiles	
						Lowest	Highest
Entire Sample Merger			25,166	64.62	42	0	100
			22,030	62.42	39	0	100
	Public	Public	5,147	107.92	96	63	136
	Public	Private	1,766	97.84	86	42	136
	Private	Public	11,131	48.42	19	0	73
Tender	Private	Private	3,986	27.09	0	0	28
			3,136	80.06	52	30	98
	Public	Public	1,257	71.44	49	31	85
	Public	Private	1,030	97.8	67	34	123
	Private	Public	533	73.61	43	21	84
	Private	Private	316	67.38	41	19	92

^{*} “Effective date” is defined here as the day of the shareholder vote approving the transaction, not the closing date, which is the relevant date used in this book for the most part.

Source: S. Betton and K. S. Thorburn, “Corporate Takeovers,” in B. E. Eckbo, ed., *Handbook of Empirical Corporate Finance*, vol. 2 (Amsterdam: Elsevier, 2008), 304. Reprinted with permission of Elsevier.

date. The record date is four to eight weeks before the vote takes place. Many shareholders sell their holdings after the record date and before the date of the shareholder meeting. They have the right to vote at the shareholder meeting but no longer have an interest in voting shares of a company that they do not own. The new owners of the shares, who would have an interest in voting, do not have the right to vote because they did not own the shares on the record date. The result is that these shares are not voted at all. Shares that do not vote in favor are counted as voting against the merger. Therefore, a large turnover in the investor base after the announcement of a merger makes it more difficult for the target company to obtain shareholder approval. One way to improve the odds is to set the record date at a longer interval after the announcement of the merger. This gives shareholders time to sell and arbitrageurs time to accumulate shares. Arbitrageurs naturally have an interest in the closing of the merger and will vote their holdings in favor. If a large premium is paid in a merger, then long-term holders are more likely to sell to arbitrageurs than when the premium is modest. Therefore, the period between the announcement of a merger and the record date should be longer for mergers with larger premia than for those with smaller premia.

Tender offers have one major drawback that limits their use: the best price Rule 14d-10. This rule means that all shareholders must receive the same merger consideration no matter when they tender their shares. The price paid to all must be the highest that is paid to any shareholder. Courts interpreted this rule in a very broad sense. Until November 2006, some courts interpreted consideration received in a merger to include also bonuses paid to management, noncompete payments, and golden parachutes and other executive compensation if it became due as a result of the acquisition. A tender offer had to pass an “integral part of the tender offer” test² in order to avoid violating the best price rule. Under this test, if a payment is connected with the transaction, such as a change of control payment that is triggered by the transaction, then it is part of the price paid and violates Rule 14d-10. As a result, transactions in which large golden parachutes are made, or where executives continue to own shares—for example, as part of a co-investment with a private equity fund—had to be structured as mergers rather than tender offers. Other courts used a more lenient standard, the *bright line* test. Under this test, the best price rule applied only to transactions that occurred while the tender offer was pending. The legal uncertainty created by these divergent interpretations limited the use of tender offers.

In November 2006, the SEC issued a clarification to Rule 14d-10 that made tender offers more attractive. Under the new and current standards,

compensation paid to employees is no longer considered “integral part of the tender offer” if two conditions are met:

1. The compensation is related to services rendered in the past or future, or related to noncompete agreements (i.e., services that are not rendered).
2. This compensation cannot be based on the number of shares tendered by the employee.

This change was done through the addition of only a few words to one sentence in the rule. The original Rule 14-d10 read:

The consideration paid to any security holder *pursuant to the tender offer* is the highest consideration paid to any other security holder *during such tender offer*. [Italics added.]

The amended Rule 14-d10 reads:

The consideration paid to any security holder *for securities tendered in the tender offer* is the highest consideration paid to any other security holder *for securities tendered in the tender offer*. [Italics added.]

A direct consequence of the update of Rule 14d-10 has been an expanded use of tender offers, including by private equity firms. The incentive structure of private equity firms previously prevented them from using tender offers. During the first six months of 2007 at least 29 tender offers for U.S. targets with a market cap in excess of \$200 million were announced, compared with just 5 for the same period in 2006. This trend is expected to continue.

A remaining problem with tender offers is the financing of the shares that are acquired in the tender. Because the company remains public between the completion of the first step, the tender offer, and the second step, the short-form merger, the investment bank financing a tender offer is subject to the margin requirements of Regulation T (Reg T). Under Reg T, customers must have at least 50 percent equity in their account at the time of the purchase of a security on credit.

Overall, tender offers remove many of the protections for investors that mergers provide. For a start, appraisal rights are not available in a tender offer. Only in the subsequent short-form merger can shareholders exercise their appraisal rights. Appraisal rights are discussed in Chapter 13.

For investors, another big disadvantage of tender offers over mergers is the lower fiduciary standard to which boards of directors are held in a tender offer. As we discuss in Chapter 8, courts apply a high standard of entire fairness in a merger. In a tender offer, however, courts only evaluate whether the tender offer was coercive. As long as there is no coercion, a tender offer will pass legal muster. In addition, there is no obligation for the board of the target to seek a maximum price for shareholders. We discuss this in more detail in Chapter 11, when we look at the use of tender offers to squeeze out minority shareholders.

The absence of a shareholder vote is also a drawback, in particular for institutional investors. Many institutions rely in their voting on the advice of the major proxy advisory services. These services do not provide recommendations on tender offers because no shareholder vote is involved. As a result, many institutions simply go with the default decision of tendering their shares. Institutional investors might not have as sound a basis for tendering their shares as they would if they were voting on a merger.

Courts take a somewhat naive position when they assume that tender offers are voluntary and that shareholders have a choice whether to tender or not. Most institutional investors will not make a careful evaluation of a tender offer but simply follow the management recommendation to tender. It takes the initiative of an aggressive activist investor to stop institutions from tendering their shares. It is easier for shareholders opposed to a buyout to solicit proxies against the transaction in a merger than to convince investors not to tender their shares.

Moreover, extension risk introduces a strong incentive to tender rather than withhold shares. An investor who does not tender shares eventually will be cashed out at the same price in the second step when the short-form merger closes. This delay can last anywhere from a few days to several months. The investor loses the time value of money in this period, because the ultimate payment after the short-form merger must be the same as that in the tender and cannot pay interest for the forgone period of time. Therefore, it is always optimal to tender unless opposition to the transaction is so strong that the probability of the deal not closing, or the price being increased, is very high.

Even companies that are not current on their financial statements can be acquired through a tender offer. If the company were to be acquired through a merger, it would have to update its financial statements to become current on its SEC filings before it could solicit proxies for a merger. In a tender offer, however, an acquirer can purchase a target company even if shareholders have no basis to evaluate the offer or determine whether the price paid is reasonable. A company that is delinquent on its SEC filings usually trades at a distressed price; it may even be delisted from an exchange and be relegated

to the pink sheets if it cannot update its filings promptly. This uncertainty about the company's financial condition leads to significant selling pressure and a steep drop in its share price. Such a firm can be bought at a price that is much lower than what shareholders would have accepted if they were informed fully about the company's value and prospects. Shareholders will accept cash, even if they think it is less than the value of the firm, rather than hold a pink sheet company that is delinquent in its filings.

Finally, an interesting difference between mergers and tender offers can be seen in the returns earned by shareholders of target and acquirer before and after the announcement of the transaction. Table 6.3 shows the cumulative abnormal returns (CARs) earned in the run-up to an announcement of a transaction between days 41 and 2 prior to the announcement, as well as from the day prior to the announcement until the day after. It can be seen that the abnormal returns are higher in tender offers than mergers. This is true for both the target and the acquirer. Abnormal returns are defined by the authors of this study as the excess return over the expected return $\alpha + \beta \times r_{market}$. This is a standard method for estimating excess returns used widely in the financial literature.

The conclusions that can be drawn from these results are not only that abnormal returns are higher for tenders than mergers but also, just as interestingly, that both transaction structures generate positive abnormal returns for the combination of target and acquirer. In layman's term, on average, mergers are win-win situations for investors in all firms involved.

BURGER KING PROVISION: THE BEST OF BOTH WORLDS

Recently, the distinction between tender offers and mergers has begun to be somewhat blurred in the United States. Pioneered in the acquisition of Burger King by Brazilian private investment group 3G Capital in the year 2010, this clause in a tender offer allows the buyer to convert a tender into a merger if the tender does not close within a specific time period. The merger agreement provides for two different thresholds: If after the tender offer 3G Capital holds less than 79.1 percent of Burger King's shares, then a shareholder meeting would be called that will approve a merger of the two firms. At that meeting only a simple 50 percent majority of shareholders are needed to approve the merger. The odd number of 79.1 percent for the tender offer is related to the top-up option and the number of shares that are authorized for Burger King to issue. If the 79.1 percent level is reached, then Burger King can issue sufficient shares in the top-up option to get 3G Capital's stake to 90 percent, which is the level at which the squeeze-out of the second step can be effected.

TABLE 6.3 Cumulative Abnormal Stock Returns to Targets and Bidders (Individually and Combined) Relative to the Initial Bid Date

	Target CAR		Initial Bidder CAR		Combined CAR	
	Number	Run-up (-41,-2)	Announcement (-1,1)	Number	Run-up (-41,-2)	Announcement (-1,1)
Merger						
Mean	6,836	0.0619	0.1338	13,995	0.0050	0.0069
Median		0.0481	0.1134		-0.0024	-0.0008
Z-Score		20.7051	88.2153		-2.2479	-3.8858
% positive		0.6181	0.8212		0.4921	0.4920
Tender Offer						
Mean	2,320	0.0868	0.1881	1,468	0.0060	0.0076
Median		0.0693	0.1707		0.0006	0.0011
Z-Score		14.9492	52.7321		0.5420	0.9110
% positive		0.6427	0.8573		0.5014	0.5123

Source: S. Betton, and K. S. Thorburn, "Corporate Takeovers," in B. E. Eckbo, ed., *Handbook of Empirical Corporate Finance*, Vol. 2 (Amsterdam: Elsevier, 2008), 363-364. Reprinted with permission of Elsevier.

With the introduction of the aforementioned section 251(h) in Delaware's General Corporate Law the Burger King structure is no longer needed to expedite tender offers as the second step of a merger can now proceed without the Burger King option. It should be noted that it had been employed in a number of mergers.

SEC'S APPROACH TO REGULATION

The review of a transaction by the Securities and Exchange Commission depends on whether the acquisition is structured as a merger or a tender offer. Tender offer filings apply to both cash tender offers and stock tender offers. The SEC reviews three types of documents:

1. *Proxy statements.*

These are filings made on Schedule 14A. They are similar to proxy statements sent out with annual meetings. A merger that requires shareholder approval requires a special meeting that is convened for this purpose. Sometimes the timing of the special shareholder meeting overlaps with that of the regular annual meeting, and the two are combined. Target companies sometimes simply skip the regular annual meeting if they are going to be acquired shortly and have a special meeting only for the purpose of approving the merger. If the merger were not to be approved, they would have to reconvene the regular annual meeting later.

2. *Tender offer statements.*

These are documents that describe the terms of a tender offer. As discussed on Chapter 6, no shareholder approval is needed in a tender offer because shareholders consent indirectly by tendering their shares. These filings are made on Schedule TO.

3. *Information statements.*

These are statements on Schedule 14C that are similar to 14A filings except that no proxies are solicited. Minority squeeze-outs through short-form mergers, for example, do not require shareholder approval, and a Schedule 14C is provided to shareholders.

A number of other, related filings are made in a merger, many of which reproduce information that is filed in the three statements just described. These other filings include:

- Going-private transaction; Schedule 13E-3.
- Schedule 14D-1 and 14D-9.
- Schedule 14E-4.
- Form 15. Once the merger is completed, the company files a Form 15 to announce the termination of the listing of its shares. These filings are made after the completion of the merger and have no relevance to arbitrageurs.

TABLE 6.4 SEC Filings Made by Acquirers and Targets in Tender Offers and Mergers

	Tender Offer		Merger	
	Cash	Stock Exchange Offer	Stock	Cash
Acquirer	Schedule TO, Summary term sheet	Prospectus under Rule 425	Registration statement under Rule 425	Proxy under 14A
Target	Schedule 14D-9	Schedule 14D-9	Proxy under 14A	Proxy under 14A

Table 6.4 shows the principal filings made by targets and acquirer as a function of whether the transaction is structured as a merger or tender offer, and whether the consideration is cash or stock. When both cash and stock are offered, the filings required for stock-for-stock mergers are made.

Documents filed with the SEC are available to the public on its EDGAR system through the Internet. For arbitrageurs, EDGAR is the first stop in the collection of information.

As soon as a merger is announced, the press release is filed with the SEC under Form 8-K along with the merger agreement. An 8-K is required to be filed within four business days of a material event. When a merger agreement is signed, the press release and the agreement are filed under item 1.01 of Form 8-K. There is often a duplicate filing of the press release and the merger agreement because under byzantine securities laws, a merger agreement is reportable not only as a material event but also, in the event of a stock-for-stock merger, as an event related to an offer of securities, or as a tender offer. Therefore, the EDGAR system will also show a Rule 425 filing or a Schedule TO with the exact same information as the 8-K. It is one of the more annoying aspects of researching mergers that many filings are duplicative or empty shells. Unfortunately, there appears to be no interest on the side of securities lawyers to make the system more easily comprehensible for investors. The more complex the system, the more need for expensive services of securities attorneys.

Mergers

In general, when stock is issued by the acquirer, the issuance may be subject to approval by shareholders. This may be required by the laws of the state of incorporation or by rules of the exchange on which the acquirer is listed. For example, the stock exchanges require shareholder approval whenever more than 20 percent of the outstanding shares are issued.

If the acquisition is structured as a merger, a registration statement of the new shares is filed by the acquirer under Rule 425. For a cash merger, a

proxy statement is filed on Schedule 14A by both the acquirer and the target. The acquirer's shareholders approve the issuance of shares and the merger, whereas the target's shareholders approve the merger only. Duplicate filings are a common annoyance in mergers. Exhibit 9.1 shows an excerpt of such a duplicative Schedule 13-E3 filed by rue21. The information required by Schedule 13-E3 (to be discussed) is already contained in the proxy statement. Nevertheless, because this merger leads the company to go private, it is also required to make a going private filing on Schedule 13-E3. Documents of this type that are full of references to other documents are common in mergers. The irony is that the SEC requires the information required by the going-private rule to be incorporated into the proxy statement yet also requires the company to make a filing of the going-private schedule.

When a company seeks approvals from shareholders, it seeks proxies to vote the shareholders' shares at the meeting. A proxy statement must be filed at least 20 days prior to the shareholder meeting.

The difference between an all-cash and a stock-for-stock, or mixed cash and stock merger, is the amount of information contained in the proxy statement about the buyer. When cash is paid, target shareholders need to know very little about the acquirer. However, when stock is received in exchange for the target shares, shareholders need very detailed information about the acquirer in order to evaluate the transaction.

The layout of a Schedule 14A in connection with a merger is similar to the next example from the shareholder meeting for Wilshire Enterprises (Exhibit 6.6).

14A filings in connection with a merger are initially submitted to EDGAR as preliminary 14A filings labeled as filing type PREM14A. After the SEC has reviewed and approved the materials, the definitive proxy statements distributed to shareholders are filed as definitive filings labeled DEFM14A.

An additional item that is presented to shareholders in many mergers is a proposal to authorize the board to postpone the meeting, if necessary, to solicit additional proxies in case the number of votes present at the meeting is insufficient to adopt the merger agreement. A postponement is rarely necessary, but companies nevertheless include these proposals as an insurance policy.

Tender Offers

Tender offers give rise to multiple and duplicative documents that make life difficult for arbitrageurs who have to review them. For cash tender offers, the acquirer files a Schedule TO and a summary term sheet. For an exchange offer, the acquirer files a registration statement under Rule 425 as in a stock-for-stock merger. The target files the same documents as in a cash tender offer.

**EXHIBIT 6.6 TABLE OF CONTENTS OF THE DEFM14A
FILINGS OF WILSHIRE ENTERPRISES, FILED ON
AUGUST 5, 2008**

QUESTIONS AND ANSWERS ABOUT THE MERGER AND THE
MERGER AGREEMENT

SUMMARY

CAUTIONARY STATEMENT CONCERNING FORWARD LOOK-
ING INFORMATION

MARKET PRICE AND DIVIDEND INFORMATION

THE SPECIAL MEETING

Time, Place, and Purposes of the Special Meeting

Record Date and Quorum Required Votes

Proxies; Revocation

Submitting Proxies Via the Internet or by Telephone

Adjournments and Postponements

Solicitation of Proxies

THE PARTIES TO THE MERGER

BACKGROUND TO THE PROPOSAL RELATING TO THE
MERGER

REASONS FOR AND BENEFITS OF THE MERGER

RISK FACTORS AND DETRIMENTS RELATED TO THE MERGER

PROPOSAL 1:

ADOPTION OF THE MERGER AGREEMENT PURSUANT
TO WHICH A WHOLLY-OWNED SUBSIDIARY OF NWJ
WILL MERGE WITH AND INTO WILSHIRE FOR A
MERGER CONSIDERATION TO THE STOCKHOLDERS
OF WILSHIRE OF \$3.88 PER SHARE IN CASH

The Merger

Stock Options and Restricted Shares

Regulatory Approvals Applicable to the Merger

Conditions of Closing

Representations and Warranties

Interim Operations	
Amendments to the Merger Agreement	
Restrictions on Solicitations of Other Offers	
Termination and Termination Fees	
Payment of Merger Consideration and Surrender of Stock Certificates	
Accounting Treatment	
Merger Financing/Sources of Funds	
Conduct of the Business of Wilshire if the Merger is Not Completed	
Appraisal Rights	
Material U.S. Federal Income Tax Consequences	
Interests of Officers and Directors in the Merger	
Fees and Expenses	
The Voting Agreements	
Opinion of Financial Advisor	
Board Recommendation	
PROPOSAL 2:	
ADJOURNMENT OF THE SPECIAL MEETING	
Board Recommendation	
PRINCIPAL STOCKHOLDERS AND SECURITY OWNERSHIP OF MANAGEMENT	
STOCKHOLDER PROPOSALS	
ANNEXES	
A. Agreement and Plan of Merger	
B. Voting Agreement	
C. Opinion of Friedman, Billings, Ramsey & Co., Inc.	
D. Section 262 of the General Corporation Law of the State of Delaware	

Table of Contents of the DEFM14A filings of Wilshire Enterprises, filed on
August 5, 2008

This information is required in a tender offer statement:

1. *Summary term sheet.*
This is useful as a quick overview of the transaction.
2. *The name of the target company*, class of securities involved, and indication of any prior purchases of these securities.
3. *The identity and background of the filing person.*
The acquirer in a strict sense is often a merger subvehicle that has been established only for the purpose of making the acquisition. This item gives some background as to the ultimate acquirer behind the merger vehicle.
4. *Terms of the transaction.*
This includes the number of shares being bid for, expiration date, tendering and withdrawal procedures, payment method, and tax consequences.
5. *History.* Provide description of past contacts, negotiations, or transactions with the target.
6. *Purpose.* Explain the purpose of the transaction.
7. *Source of the funds used to complete transaction.*
This section is particularly relevant for cash mergers. It allows arbitrageurs to estimate the risk associated with the financing.
8. *The number of shares bidder already owns.*
9. *Identity of persons and parties employed by bidder for the transaction.*
10. *Bidder's financial statements.* Two years of statements must be provided.
11. *Additional information.* Include any agreements between the bidder and any of its officers that might be material to target company shareholders.
12. *Exhibits.* Any tender offer materials that need to be filed as an exhibit

Shareholders receive an “offer to purchase” and a “letter of transmittal,” which are also often published in major newspapers. The offer to purchase describes the principal terms of the transaction.

Rule 14E governs some of the principal requirements for tender offers:

- The tender offer must be open for at least 20 business days. The starting point is the publication of the offer, its advertisement in a newspaper, or the submission of the materials to the target.
- The tender offer can be extended for a period of at least 10 business days. A notice of extension must be sent to shareholders. Extensions are a frequent occurrence because many companies fail to get the minimum number of shares needed by the time of the expiration of the initial

tender period. Good-quality communication can increase the likelihood of a successful tender offer.

- If the tender offer is amended, a notice must be sent to shareholders within 10 days. It must also be delivered to the target and other bidders, if any. The exchange on which the company is quoted must also be notified. All shareholders must receive the same price. This best price rule has stopped the practice of greenmailing that was prevalent in the 1980s. If the price is increased during the tender offer period, for example, due to a bidding war, then all shareholders must receive the higher price, including those who tendered prior to the increase.
- Most important, the acquirer must pay for the securities promptly.

Another important rule is the prohibition of the acquirer from purchasing shares of the target from the announcement of the tender offer to its expiration.

In an exchange offer, the acquirer pays for the shares of the target in stock. The stock to be sold must first be registered with the SEC. However, the exchange offer period commences when the registration statement is filed with the SEC. The exchange offer can be consummated once the registration statement has been declared effective by the SEC.

The target must respond to a tender offer within 10 days by filing a Schedule 14D-9 and a summary term sheet, which also contains mainly references to the Schedule 14D-9. This filing must state whether the target supports or rejects the tender offer. If the target has no position, it must state the reasons. Schedule 14D-9 is organized in this way:

1. Subject company information
2. Identity and background of filing person
3. Past contacts, transactions, negotiations, and agreements
4. Solicitation or recommendation
5. Person/assets, retained, employed, compensated, or used
6. Interest in securities of the subject company
7. Purposes of the transaction and plans or proposals
8. Additional information
9. Exhibits

Going-Private Transactions

Rule 13e-3 describes the information that must be furnished to shareholders when a company goes private. Most of this information is already contained

in the proxy statement or tender offer document, so Schedule 13E-3 always resembles that of rue21 in Exhibit 9.1. Some information that must be furnished to shareholders according to Rule 13e-3 and that is contained in the proxy or tender offer statement includes:

- Whether the company believes that the transaction is fair to shareholders. Needless to say, it always believes it is. The justification usually evolves around trading liquidity of the shares, premia received, prospects for the business, and fairness of the process.
- Whether independent directors have retained independent representation. This is always the case except for the smallest transactions in the nano-cap space.
- Whether independent directors support the transaction.
- Descriptions of all contacts between the target and acquirer for the last two years.
- Appraisals from outside valuation firms, if any. These are often the most interesting materials filed in going-private transactions. Presentations to the board of directors by the investment bankers are required to be filed, and these tend to be a treasure trove of information about the valuation and its assumption.

Going-private transactions with 13E-3 filings are always reviewed by two layers in the SEC: the branch office and the Office of Mergers and Acquisitions. As a result, the SEC makes lengthy comments and requests many changes before a company can go private. This leads to multiple amendments of the filing on the EDGAR system.

Financing

The most critical aspect an arbitrageur faces in assessing the probability of whether a merger will go through is the question of financing. This is primarily a concern for cash deals or mixed cash and stock deals. As soon as a deal has a cash component, the source of the funding becomes a potential source of trouble.

In a stock-for-stock merger, financing can also be a problem. This is less obvious, because this detail is buried deep inside the covenants for the target's bonds or loans. Target companies that have debt are often required by covenants in the loan or bond documentation to redeem their debt if a merger happens. These clauses are called *change-of-control covenants*. If a target company has large amounts of debt outstanding, it might be difficult for a buyer to redeem the outstanding debt. This is especially true if the buyer is not very strong financially.

Merely from a net return point of view, some of the transactions least attractive for arbitrageurs are the purchases of small-cap firms by large corporations. In these cases, the buyer can often pay for the acquisition out of its cash on the balance sheet. The low risk is obvious to all market participants, and the spread reflects the low risk very quickly. The acquisition of enzyme maker Verenum Corporation by BASF SE is a good example. The tender offer was announced on September 20, 2013, with an anticipated closing "in the fourth quarter of 2013." The transaction had an equity value of only \$51 million. BASF's cash balance of over €1.6 billion at the end of its fiscal year 2012, and its free cash flow was about \$2.6 billion for 2012. Not only did BASF have enough cash on its balance sheet to make the acquisition, it was generating enough cash to pay for it in about one week. An arbitrageur can conclude safely that this deal has no financing risk. In such a simple transaction, the rest of the market came to the same conclusion very quickly, as the chart of Verenum's stock price shows (Figure 7.1). Verenum traded at no meaningful discount to BASF's buyout price of \$4 per share.

In the absence of any real risk, the spread narrowed very quickly and amounted to only \$0.02 four days after the announcement. An arbitrageur would assume a closing on December 31 and calculate an annualized spread of only 2.0 percent, not attractive to any arbitrageur, especially once

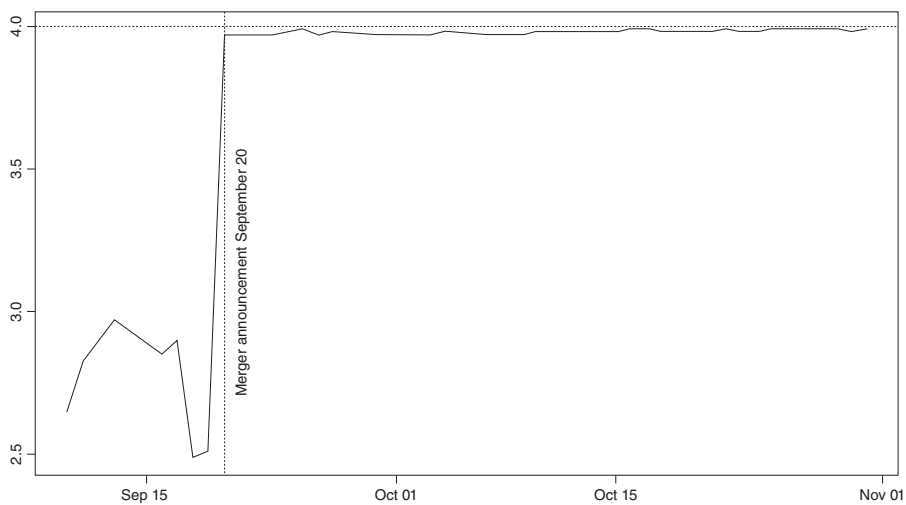


FIGURE 7.1 Verenum's Stock Price after BASF's Acquisition Proposal

transaction costs are factored in. The actual outcome was an earlier closing that took place on October 31, so that the realized annualized spread would have amounted to 6.0 percent before transaction costs. Of course, the actual timing of the closing was still uncertain on September 24, when an arbitrageur could have locked in the spread of \$0.02.

An arbitrageur should always understand the rationale behind such an acquisition. Several scenarios can be distinguished when a large company buys a smaller one:

- *A buyer acquires a target firm in order to acquire its technology.* These acquisitions are examples of vertical integration.

These transactions tend to be safe because strategic considerations matter more than price. Investors tend to think in terms of earnings and consider loss-making firms as very risky. A strategic buyer, however, is thinking in terms of unique intellectual property, strategic fit, timeliness, cutting off competitors from technology, and at best replacement cost as far as financial aspects are concerned. It is not unusual to see atypically high multiples in this type of transaction. Moreover, some technology companies have more or less outsourced their research and development departments to venture capital firms; rather than having to expense their development cost when they do their own research, they can record goodwill if instead they acquire the technology through the purchase of another firm. This will boost their own earnings and allows them to benefit from significant leeway in the timing of the eventual write-off of the goodwill.

- *A buyer acquires a profitable firm in a multiple arbitrage.*
- *A buyer acquires a firm to prevent a competitor from buying it.* Although such a rationale will not be publicized, it does occur, albeit rarely.

If a buyer's stock trades at a high multiple and it acquires a firm that trades at a lower multiple, it will boost its own valuation because its multiple will now be applied to the earnings of the combined entity. WorldCom was a prime example of this strategy and its fate illustrates the inherent risks. As far as merger arbitrage is concerned, multiple arbitrage tends to be a safe bet. Roll-ups and similar forms of horizontal integration are usually examples of multiple arbitrage.

The usual rationale for a merger is either growth or synergies. This rationale also applies when a large firm buys a smaller one but is less relevant. The addition of the small firm will not yield cost savings through synergies or additional growth that are noticeable. Most likely, these effects will be diluted by the large firm's other activities. Diversification was a popular reason for merging during the conglomerate boom in the 1960s and

1970s but has since been discredited with some notable exceptions, such as General Electric.

The analysis of financing risk becomes more complex when a buyer must raise funds to consummate the purchase of a target. The analysis often can again be rather simple when a large firm buys a smaller one and has more than enough cash flow to cover the interest expense and repayment. As the size of the acquisition grows relative to the size of the acquirer, financing will become a critical component of the risk.

The biggest financing risk is found in leveraged buyouts (LBOs). Frequently they are management buyouts (MBOs) backed by private equity. Almost always, private equity buyouts have strong management involvement, and the line between MBOs and private equity buyouts has become somewhat blurred. In these transactions, the size effect is inverted. A small equity contribution by the sponsor of the acquisition is used to buy firms that are a multiple of the size of the acquirer. In an MBO, the acquirers ultimately are individuals. No bigger discrepancy in size can be found elsewhere.

These transactions have in common that the buyer uses very little equity to buy the target and borrows most of the funds required for the transaction from banks. In addition to bank loans, bonds are often issued, and the period until the issuance of the bonds is funded through bridge loans. Banks resell the loans in the secondary market.

TYPES OF DEBT FUNDING

In the vast majority of cases, debt used in the acquisition of a company is underwritten by a bank. The debt is structured into several different tranches until the transaction is consummated. It is expected that some bank debt will be repaid immediately after the completion of the merger; other debt will be replaced by bonds later on. There are three principal uses for the debt:

1. *Repayment of existing debt that becomes due under change of control provisions.*

In the United States, a common form of protection for lenders against the risk of an increased debt load after a buyout are change-of-control clauses. If the ownership changes, the debt becomes due immediately. The lender can waive this provision in circumstances where the debt load is not overly burdensome, and the debt remains outstanding. However, in most mergers, lenders seek repayment. This is even more so the case in leveraged buyouts because creditors can get higher interest from new, more risky debt issued under buyout

conditions. High-yield bonds often require redemption at a premium if a change of control occurs. If a bond would normally be redeemed at par, the redemption price under a change of control provision is often 101 percent, of course plus accrued interest. Sometimes early redemption under change-of-control clauses is subject to a sliding scale, where the premium is higher in early years and declines later. Change-of-control covenants are used widely in debt of U.S. companies and have been introduced only recently into European bonds after bondholders suffered losses when issuing companies were bought up and suffered from downgrades when they took on additional debt.

In Europe, straight bonds generally are not issued with change-of-control clauses. This can be a problem for bondholders, as was the case in the acquisition of ISS Global A/S (Chapter 8). Convertible bonds, however, do have change of control provisions. The rationale is that convertible bonds usually are issued at a premium. If they were redeemed at their conversion rate if the company is acquired shortly after issuance, bondholders would suffer a loss. In order to offset such a loss, the conversion ratio is increased in the case of a change of control. Exhibit 7.1 shows an example of such a change of control clause in the case of the 2.5 percent convertible bond maturing on April 7, 2018, issued by Celesio AG, which was acquired by McKesson in 2014, triggering the change-of-control clause. The bond started accruing interest on April 7, 2011, which gives 2,557 days until maturity. The change of control occurred on January 28, 2014, or 1,530 days before maturity. Using these numbers as well as the formula and numbers from Exhibit 7.1, the new conversion price following a change of control can be calculated to be

$$\frac{22.48}{1 + \left(0.3 \times \frac{1,530}{2,557}\right)} = 19.05 \quad (7.1)$$

On a €100,000 face value bond, the number of shares a bondholder would have received upon conversion was 4,448 (which is 100,000 / 22.48, the initial conversion price). Following the change-of-control adjustment, the bondholder will receive 801 additional shares. The new number of shares is 100,000/19.05, which is 5,249. At an acquisition price of €23.50, this corresponds to an additional value of €18,823, or almost 19 percent. Considering that prior to the announcement of the merger on October 24, 2013, the bond had been trading at a price of 118 percent of face, the change-of-control clause worked exactly as it was supposed to in compensating holders of the bond for the premium they would have lost had the bond been redeemed at par.

2. *Payment to selling shareholders.*

The payment to acquire the shares held by the previous shareholders is the biggest expense in a merger. Most public companies have a low level of leverage, and the value of the equity represents the biggest portion of the acquisition value. Only in distressed acquisitions will payments to equity holders be less than debt. However, such transactions tend to pose too much risk to be suitable for arbitrage investments.

3. *Transaction costs.*

Expenses for investment bankers and lawyers as well as smaller items such as Securities and Exchange Commission (SEC) filings fees and shareholder solicitation represent several percent of the total cost. Investment banking fees are by far the largest element of these costs and typically amount to 5 percent of the value of the transaction. Golden parachute payments for managers are also a form of transaction costs.

EXHIBIT 7.1 TERMS AND CONDITIONS OF THE CONVERTIBLE NOTE ISSUED BY CELESIO

Initial Conversion Premium:

30%

Initial Conversion Price:

EUR 22.48 This corresponds to a 30 percent premium over EUR 17.2952, the share volume-weighted average price per share on Xetra between launch and pricing, subject to adjustment pursuant to anti-dilution provisions.

Initial Conversion Ratio:

Approximately 4,448 This represents the number of shares corresponding to EUR 100,000 principal amount per bond, divided by the initial conversion price, subject to adjustment pursuant to anti-dilution provisions
[...]

Change of Control Put:

Upon the occurrence of a Change of Control (as defined in the Terms & Conditions), any Bondholder may require the Issuer to redeem all or part of their Bonds at the Principal Amount (plus accrued interest) by giving not less than 10 days' notice, which notice shall take effect on the Control Record Date. "Control Record Date" means the Business Day fixed by the Issuer, which will be not less than 40 nor more than 60 days after the notice of the Change of Control (see also "Change of Control Price Adjustment Protection" below).

Change of Control Price Adjustment Protection:

If the Issuer gives notice of a Change of Control (as defined in the Terms & Conditions), then the Conversion Price upon any exercise of Conversion Rights on or before the Control Record Date (as defined above) will be adjusted pursuant to the following formula:

$$CP_a = \frac{CP}{1 + \left(ICP \times \frac{D}{M} \right)}$$

where:

CP_a = Conversion Price after adjustment.

CP = Conversion Price before adjustment.

ICP = Initial Conversion Premium.

D = Number of days between the date the Change of Control occurs and the Maturity Date.

M = Number of days between the Issue Date and the Maturity Date.

Source: Summary, Celesio AG Convertible Bonds, April 2011

Investors in debt are mainly concerned with getting paid back. Unlike investors in equity, their upside is limited to the interest received, while their downside risk is the entire loan amount. The interest charged on a loan will depend not only on the riskiness of the underlying venture but also on the order in which the debt is repaid. Every homeowner knows that the interest charged on a mortgage is less than that for a home equity line of credit

because the risk of loss is higher for the latter than the former. The same principle is true for debt used in the financing of mergers. We will digress briefly to discuss the hierarchy of repayment for different types of debt if a company goes into default.

Here is a list showing the priority of claims (highest to lowest) in a chapter 11 bankruptcy proceeding, which are the bankruptcy proceedings in the United States. Similar priorities have been established in bankruptcy and insolvency proceedings in numerous other jurisdictions. Outstanding payments with the highest priority are paid first, and any funds left over are then available for the payment of the next priority, and so on.

1. Secured debt, to the extent that the value of the asset covers the associated debt
2. Bankruptcy administrative costs
3. Postpetition bankruptcy expenses
4. Wages, subject to limitations
5. Employee benefit plan contributions, subject to limitations
6. Unsecured customer deposits, subject to limitations
7. Federal, state, and local taxes
8. Unfunded pension liabilities, subject to limitations
9. Unsecured claims
10. Preferred stock
11. Common stock

Lenders will try to make secured loans whenever possible. Unsecured loans are much riskier and are not paid until a long laundry list of other claims has been paid. Banks in particular have enough influence on an issuer to negotiate a senior position for themselves in the capital structure. As a result, most bank loans are secured and traditionally have been held by banks. For some time now, however, banks have been more willing to unload loans, in particular in light of capital regulations. For example, when a company's rating is downgraded, capital requirements for banks increase to the point that a loan may become unattractive. Moreover, banks have taken a more active portfolio and risk management approach to their loan exposures and are more willing to sell loans when they see too much exposure to issuers with certain common characteristics than they would have in years past.

The situation changes for bond financing. Bonds are created with the intention of providing an easily tradeable instrument to investors. Although investment banks underwrite bond offerings, thereby providing guaranteed initial liquidity for the issuer, it is not their intention to hold on to the bonds for a long period of time. Instead, investment banks sell the loans to investors. The multitude of investors who each acquires a small piece of

the pie reduces their leverage relative to the issuer. As a result, most bonds are unsecured.

Another important difference between loans and bonds is the regulatory nature of the two forms of financing. In the United States, most bonds are publicly traded and are registered with the SEC. This means that the issuer must make periodic filings with the SEC and comply with numerous regulations, in particular Sarbanes-Oxley. In transactions in which the issuer is going private, the issuance of public bonds would negate some of the advantages of no longer being a public company. This problem can be avoided if the bonds are issued as a private placement; however, the transfer of such bonds is restricted, which in turn negates the advantage of having a bond as an easily transferable instrument.

Bank Loans

Although bridge loans are also issued by banks, we are referring here to more permanent loans. For larger buyouts, several loans with different maturity dates are used in order to avoid overwhelming the borrower with a single large repayment. In practice, the debt is rarely paid off; most frequently, it simply is refinanced with new loans or bonds. The advantage of loans is that they are held by a small number of banks. More recently, loans are resold in the secondary market to institutional holders. This allows banks to free up their balance sheets for new loans and allows other creditors to invest in debt on terms available otherwise only to banks. Collateralized loan obligations (CLOs) were among the most active buyers of acquisition related bank loans in 2005–2006. These vehicles fell out of favor during the financial crisis and have had to scale back their buying. Whether they will return to their peak level of activity depends on investors regaining confidence in these vehicles, which cannot be predicted at the time of this writing.

Bank loans often are secured; if unsecured, they are senior to other unsecured debt. Almost anything can be used as collateral. Inventory, receivables, intellectual property, and equipment are the most frequent types of collateral. Banks will lend up to 85 percent of the value of the collateral for accounts receivables, less for equipment. Inventory is often perishable (such as fashion items for a retailer) and may be borrowed against for less than half of its value. For long-term loans, real estate is the principal type of collateral.

The term or maturity is the defining characteristic of bank debt. Most loans pay interest at a variable rate.

Short-term loans are usually promissory notes often issued under lines of credit. They have maturities of less than one year, commonly 90 days. They are payable upon demand by the lender. The borrower has to rely on the strength of its relationship with the lender and also on the willingness and

ability of the lender to continue to fund the loan. Short-term loans tend to have simple documentation and are often unsecured. Banks see these loans as low-risk lending because they are paid back quickly, and a borrower's financial condition is unlikely to deteriorate significantly over the short maturity of these loans.

Intermediate and long-term loans have 1- to 15-year horizons and are more complex to close. Due to their longer maturity, they often carry restrictive covenants to protect the interests of the lender. These covenants limit the ability of the borrower to pay dividends, sell assets, or make other non-critical business expenses. Term loans can be amortizing or have a balloon. A *balloon* refers to the entire amount being due at one time. A combination of both is also frequently found: The loan amortizes according to a schedule that stretches beyond its term. The remaining balance is due at maturity. Other sinking fund features are less common but can be negotiated if needed. Larger mergers are structured with several staggered term loans of different maturities.

A new development in the 2000s is the growth of a market in leveraged loans. They are similar to normal bank loans in that they are secured and carry variable interest rates. However, their term is longer and compares to that of junk bonds. More important, the issuers underlying the loan are companies that have a large amount of leverage—hence the name of the loans. Some investors view leveraged as a substitute for junk bonds. It was the demand from such investors, in particular hedge funds and CLOs, that led to an explosive growth in the leveraged loan issuance in the past decade. Leveraged loans provide the investor with a more senior position in the capital structure than junk bonds, which are unsecured, yet provide an attractive spread over the London Interbank Offered Rate (LIBOR). For the issuer, the cost of leveraged loans is less than that of junk bonds because the loans are secured and the bonds are unsecured. For banks, the emergence of the market has meant that loans can be made to companies that in past years would not have met underwriting standards. Banks are willing to make the loans and hold them in their inventory briefly because they expect to sell off the loans quickly to investors, so that the credit risk for the bank is minimal. However, banks can earn generous fee income for arranging these loans.

Bridge Loans

Some debt is expected to be repaid very quickly after the completion of the merger. Only a temporary form of financing is needed, which is called a *bridge loan*. Potential sources of funds could be:

- *Proceeds from the issuance of bonds or the remortgaging of assets.* The merger is often completed in a very short time frame, whereas such

financing maneuvers can take longer. In addition, potential lenders are not willing to make loans if a merger is pending.

- *Sale of assets or noncore businesses.* Sale-leaseback transactions or the disposition of product lines that the acquirer does not need fall into this category. The factoring or sale of account receivables also tends to take longer.
- *Cash on the balance sheet of the target.* The acquirer cannot access cash balances of the target company until the merger is completed but must pay for the shares immediately. A bridge loan is used to overcome the timing difference in the payment. This is particularly relevant for cash-rich target companies.

Sometimes bridge loans are provided as temporary financing until permanent financing in the form of bonds can be secured. Bonds tend to have change of control provisions, so that in many instances they can be issued only after the completion of a merger. For example, in a leveraged buyout, the target company will be the issuer of the bonds. Due to change of control provisions, the acquirer will finance the acquisition with a bridge loan and replace it with bonds issued by the target subsequent to the completion of the buyout. In contrast, in a strategic acquisition, the buyer may be able to arrange for permanent bond financing prior to the closing, because the bonds would be issued by the acquirer. There would be no need for bridge loans.

An atypical form of bridge financing was provided to Countrywide Financial when it was acquired by Bank of America in 2008. Countrywide was experiencing financial distress as a result of credit losses on its subprime mortgage portfolio and needed additional capital. Rather than providing Countrywide with a loan, Bank of America invested in newly issued Series B preferred stock of Countrywide. Had Bank of America provided a loan to Countrywide, its financial leverage ratios would have deteriorated: more debt for the same amount of equity. Preferred stock, however, increased the amount of equity and hence improved generally accepted accounting principles (GAAP) as well as regulatory capital. The Series B preferred stock was canceled when the merger was closed.

Mezzanine Debt

Mezzanine debt derives its name from middle level in theater seating. It represents subordinated debt that structurally is inserted between a firm's senior debt and equity. It is used when banks and other senior lenders have maxed out their credit lines, the buyer is not willing or able to provide more equity contribution, and the resulting borrowing gap must be filled. It is a

standard feature in leveraged buyout transactions. It can also be used when a strategic buyer has limited cash and is unwilling to incur dilution by issuing stock for an acquisition.

Mezzanine debt is provided by specialized lenders, such as insurance companies or funds, and also CLOs. Mezzanine debt is more expensive than senior debt but cheaper than equity. In some instances, mezzanine debt is structured to receive no interest or principal payments until the senior lenders have been paid off.

Mezzanine debt often comes with a payment in kind (PIK) feature. Instead of paying interest in cash, PIK debt pays interest in the form of additional debt.¹ PIK debt increases the risk of mezzanine debt.

A PIK feature makes debt look more like equity, and this can convince banks to count it as debt. Banks often have leverage limits, above which they will not fund acquisitions. If PIK debt is counted as equity, the leverage of the firm is reduced and banks can lend. Holders of bonds with PIK features suffered significant losses in the high-yield bond meltdown of the late 1980s.

Finally, mezzanine debt often is coupled with an equity “kicker” in the form of warrants.² Warrants reduce the cost of this debt, because mezzanine lenders are willing to charge a lower rate in exchange for the additional upside upon exercise of the warrant.

Bonds

Bonds encompass a wide range of financing arrangements. They differ from loans in that they are structured from the outset as securities that can be transferred easily in small pieces. Most corporate bonds are issued by large corporations to investors who seek a stable stream of income and safety. Bonds issued for acquisitions offer high rates, but at the price of higher risk. Low-grade bonds have been around since the early part of the twentieth century under various monikers. Since the 1970s, bonds issued with high yields have been known under the term *junk bonds*, a term allegedly created by Michael Milken. The issuance of junk bonds grew dramatically during the 1970s and 1980s as investors began to be attracted to their risk/return profile. High-yield bonds have become an asset class in their own right.

Today, high-yields bonds play a secondary role in funding mergers to leveraged loans. Loans are easier, cheaper, and faster to arrange than junk bond issuances. Nevertheless, junk bonds continue to be issued to supplement leveraged loans in cases where the additional financing is needed and insufficient collateral is available for leveraged loans. Unlike in the 1980s, today most junk bonds are issued by low-rated companies that are not necessarily subject to an acquisition.

As mentioned previously, companies that issue junk bonds to the public in the United States must continue to report to the SEC and are subject

to all related regulations just as if their equity were still traded publicly, including the burdensome Section 404 certification under Sarbanes-Oxley. For companies that are going private, it makes sense to avoid the issuance of junk bonds if possible. However, strategic acquirers that are publicly traded already obviously do not face this problem.

Sale and Leaseback Financing

Companies rich in real assets are popular targets for financial buyers. During the buyout boom of the last decade, private equity funds often acquired real estate investment trusts (REITs) due to their holdings of real estate. Even less obvious businesses rich in real estate holdings became popular buyout targets, such as self-storage firms or some retailers that had long-term leases for their stores.

In a sale-leaseback transaction, an asset is sold to a third party for cash and then leased back. This generates cash up front that can be used to pay for the acquisition, but in the long run, it reduces flexibility because the company must comply with the terms of the lease. For example, if the asset is no longer needed, it cannot be sold, but the lease must be terminated, most likely with a penalty. In the case of assets that appreciate in the long run (real estate), the company no longer benefits from that appreciation. This concern can be mitigated if the lease contains an option to buy.

There are many ways to structure sale-leaseback transactions. The accounting and tax treatment depends on the details. Title to the sold assets may or may not change hands; if it does not, the lessor is essentially a lender.

Another option to raise cash is an outright sale of assets. One of the largest buyouts of all times, the \$39 billion acquisition of Equity Office Properties Trust by private equity group Blackstone, made headlines because within only six months, almost half the properties owned by Equity Office were sold. Blackstone recovered 70 percent of its investment through these sales.³ This was a traditional sale of assets without a leaseback provision. Blackstone's bet was that it could acquire Equity Office for less than the sum of its parts, similar to the style of 1980s corporate raiders.

Hedge Fund Financing

When the debt markets became impossible to access after the meltdown of the subprime market in 2007, buyers in several mergers sought to access hedge fund financing directly rather than let banks underwrite and subsequently resell the debt. It remains to be seen whether such a disintermediation will become more common.

The largest transaction used was the acquisition of Goodman Global by private equity firm Hellman & Friedman LLC. In addition to obtaining financing from banks that had not been very active in the funding of LBOs, the buyers also received funding directly from hedge funds GSO Capital Partners and Farallon Capital Management. Direct financing can lower the cost by eliminating the intermediary, but also may complicate funding. Most private equity funds are small operations that do not have sufficient staff to manage a complete syndication with the same level of professionalism as an investment bank.

Hedge fund financing is no panacea that can substitute for bank financing at any time. Another transaction that sidestepped debt financing from banks was the attempt by producer and financier David Bergstein to acquire the film distribution firm Image Entertainment. Bergstein obtained a \$60 million debt commitment directly from hedge fund D.B. Zwirn & Co. Unfortunately, Zwirn was going through some rough times. Its chief financial officer had left, and the SEC had launched an investigation amid allegations of improper booking of expenses. Although the amounts involved were immaterial compared to the \$5 billion size of the fund, it was sufficient to rattle investors and trigger a flood of redemption requests reportedly amounting to \$4 billion. Zwirn's problems were compounded by its investment strategy: It made loans to firms such as Bergstein's. The value of these loans is difficult to establish, and there is almost no secondary market. Given the problems Zwirn was facing, it was unable to provide the financing, and Bergstein was unable to come up with a replacement lender. The transaction failed to close.

Hedge fund financing has shown its effectiveness during a time of stress in the banking system when these traditional sources of credit were not in a position to extend financing. Once the financial crisis was over, hedge fund lending faded back into obscurity.

Seller Financing

Financing an acquisition through a loan from the seller is a common practice in the acquisition of small businesses. For public companies, seller financing is rare but does happen in some small- and micro-cap transactions. It can be used to replace bank lending or as a supplemental source of debt. It is probably underused in the acquisition of public companies, even though it would be an attractive replacement for other forms of debt, especially in times when other borrowings are difficult to obtain.

Rather than receiving the purchase price up front, a seller obtains a note from the buyer that will be paid back over time. In effect, the seller doubles as a bank or bondholder. The author believes that in many cases of failed mergers, it would have been more advantageous for the shareholders to receive

bonds or notes as payment than hold on to shares of a firm whose acquisition collapsed. Once a merger is dead, it is difficult to find another buyer willing to attempt an acquisition.

An example of seller financing was the installment sale of PDS Gaming, a company that leased and financed gaming equipment for casinos. PDS was taken private by its chief executive officer (CEO), Johan P. Finley, in September 2004. Shareholders received only \$1.25 per share of the total \$2.75 per-share merger consideration up front; the remaining \$1.50 per share was paid in three equal installments of \$0.50 over the next three years. Instead of using outside financing, the buyers obtained funding from the public shareholders by paying the merger consideration over time. Not many mergers are structured in this way, even though the author believes that many mergers that fail due to financing could be completed if the sponsors were relying on installment sales to shareholders. The PDS Gaming transaction had a value of only \$7.5 million, which is indicative of the type of transaction where funds are held back.

Stapled Financing

Stapled financing is not a form of financing but, rather, a description of the timing of the commitment by banks. Financing is seen as one of the principal risks in many mergers. Buyers began in the early 2000s to prearrange financing for acquisitions even before the merger agreement was signed. It increases the certainty for the target firm that the buyer will be able to follow through on a transaction. This can be particularly helpful in an auction, where multiple buyers are bidding on a target. A buyer may be able to win the auction even if its price is not the highest if the stapled financing provides enough assurances to the target that its proposal is more likely to succeed than a higher one.

The drawback for a buyer is the additional cost incurred for the stapled financing. The banks arranging the package will do so for an added fee.

Equity Financing

A less frequent occurrence is the issuance of equity to finance an acquisition. A buyer who wants to use shares to finance an acquisition generally simply structures a merger as a stock-for-stock swap rather than launching a secondary offering. In principle, financial markets should be efficient enough that the two routes are equivalent. Nevertheless, there are isolated cases where a secondary offering is chosen.

Selling shares in a secondary offering rather than offering shares to the shareholders of the target company can have nonfinancial advantages.

The constituency that acquires shares in a secondary offering is more likely to hold on to their shares after a merger than shareholders who receive shares as part of a stock-for-stock merger. In particular, in a cross-border merger, shareholders in the target company's country may have a preference for shares of domestic firms. This is true in particular for indexers and other passive investors when the target used to be included in major domestic indices but the acquirer will no longer qualify for domestic index inclusion. The forced selling can disrupt the trading of the stock and lead to adverse stock performance.

Actavis plc in its acquisition of Botox maker Allergan Inc. (Actavis changed its name to Allergan subsequently) in the year 2015 chose to issue both common and preferred stock to finance the cash portion of its acquisition. The issuance was remarkable in its overall size of US\$8.4 billion and also in that half this amount was raised through a mandatory convertible preferred stock. This preferred stock represented the largest preferred stock issuance ever by a healthcare company, and the fifth largest preferred stock issuance overall. Despite the amount of issuance, it was absorbed well in the market and did not lead to a temporary underperformance that can sometimes be seen in secondary offerings.

FINANCING OF MERGERS VERSUS TENDER OFFERS

There is a subtle difference in the funding of a straight merger compared to that of a tender offer. Tender offers are completed in a two-step process (see Chapter 4), whereas mergers are closed in one single step. In the United States, the financing of the first step of a tender offer is subject to Regulation T margin rules of the Federal Reserve. At the time the buyer has acquired shares of the target through the tender offer, there are still shares outstanding and traded. Therefore, the buyer is simply a controlling investor in a public company. Banks and brokers are prohibited from financing more than 50 percent of the market value of an investor's holdings if the stock is used as collateral. Therefore, tender offers are funded through unsecured bridge loans or private placements to the extent necessary to comply with Regulation T.

UNCERTAIN MERGER CONSIDERATION

In most merger transactions, the value to be received by the target's shareholders is predetermined. In a cash merger, a set dollar amount is paid for each share. In a stock-for-stock merger, the exchange ratio is either fixed

or fluctuates around a collar. Either way, the value is either fixed or can be computed with reasonable effort through a predetermined formula.

However, there are occasionally transactions, mostly involving smaller companies, where the value that will be received is subject to adjustment in a more complex way than through a simple collar arrangement. These transactions require an extra amount of work by the arbitrageur to evaluate. Sometimes uncertainty can come from adjustments that can be made to the merger consideration based on performance benchmarks. In other mergers, the value of the consideration received can be difficult to determine.

Adjustments to Merger Consideration

Florida-based bank Coast Financial Holdings was experiencing losses when real estate loans in its local market became troubled. At the time, house prices were falling precipitously in Florida, and many borrowers were defaulting on their loans. Developers of real estate were also defaulting on construction loans. Coast Financial struck an agreement with First Banks, Inc. of Missouri to sell itself for \$22 million, or \$3.40 per share. However, due to the rapid deterioration of Florida's real estate market, First Banks was unwilling to assume the risk of large losses entirely by itself. It created a deal structure whereby the merger consideration paid to shareholders was to be adjusted for losses incurred by Coast Financial prior to the closing. The workings of the adjustment are shown in Exhibit 7.2. The final payment to shareholders came to \$1.86 per share.

EXHIBIT 7.2 ADJUSTMENT OF THE MERGER CONSIDERATION IN THE ACQUISITION OF COAST FINANCIAL HOLDINGS

At the effective time of the merger, all issued and outstanding Common Share will be canceled and converted into the right to receive an aggregate payment of \$22,130,793.80 ("Initial Aggregate Purchase Price") less the Adjustment Amount as described below.

On the date that it is determined that all conditions for closing have been satisfied, to the extent that the sum of our allowance for loan and lease losses plus our tangible equity on the effective date of the merger (the "Reserve Plus Equity Amount") is less than the amount (referred to throughout this proxy statement as the Deficiency) that would be required to be added to the Reserve Plus Equity Amount

for such amount to equal at least seventy-five percent (75%) of the sum of our non-performing loans and leases plus other real estate owned as of the effective date of the merger (the “NPL Plus OREO Amount”) and this Deficiency is greater than One Million Dollars (\$1,000,000), then the Initial Aggregate Purchase Price will be adjusted downward.

The actual adjustment will be computed determining the amount that would be required to be added to the Reserve Plus Equity Amount to allow the Reserve Plus Equity Amount to equal exactly seventy-five percent (75%) of the NPL Plus OREO Amount. The amount determined in the immediately preceding sentence will then be rounded, upward or downward, to the nearest \$500,000 increment, with the rounded number being the actual adjustment to the Initial Aggregate Purchase Price (this rounded amount being referred to as the “Adjustment Amount”). The Initial Aggregate Purchase Price less the Adjustment Amount is referred to as the “Final Aggregate Purchase Price.” For these purposes, the allowance for loan and lease losses, tangible equity, non-performing loans and leases and other real estate owned will be determined in accordance with our past practices, consistently applied.

The amount that will be paid for each Common Share will be determined by dividing the Final Aggregate Purchase Price by the number of Common Shares issued and outstanding immediately prior to the effective time of the merger (the “Per Share Merger Price”).

If the Deficiency exceeds \$10 million, then Coast Financial and First Banks each will have the right to terminate the Merger Agreement. Based on the above formula and depending on the amount of the Deficiency, the Per Share Merger Price could be reduced from the initially offered price of \$3.40 to as low as \$1.86 prior to triggering such termination rights....

For illustration purposes only, set forth is the calculation of the Adjustment Amount and the resulting Per Share Merger Price based on various Deficiency levels.

The preceding is only an illustration of how the Adjustment Amount and the corresponding Per Share Merger Price is impacted by the existence of differing levels of an existing Deficiency. It is not necessarily indicative of the results of operations of Coast Financial now or in future periods or of any level of any future Deficiency.

As of September 30, 2007, the Deficiency was approximately \$1,286,000, which would result in a payment of approximately

Deficiency	Initial Aggregate Purchase Price	Adjustment Amount	Final Aggregate Purchase Price	Per Share Merger Price ⁽¹⁾
—	\$ 22,130,793.80	—	\$ 22,130,793.80	\$ 3.40
\$ 1,000,000	\$ 22,130,793.80	—	\$ 22,130,793.80	\$ 3.40
\$ 1,000,001	\$ 22,130,793.80	\$ (1,000,000.00)	\$ 21,130,793.80	\$ 3.25
\$ 2,500,000	\$ 22,130,793.80	\$ (2,500,000.00)	\$ 19,630,793.80	\$ 3.02
\$ 5,000,000	\$ 22,130,793.80	\$ (5,000,000.00)	\$ 17,130,793.80	\$ 2.63
\$ 7,500,000	\$ 22,130,793.80	\$ (7,500,000.00)	\$ 14,630,793.80	\$ 2.25
\$ 10,000,000	\$ 22,130,793.80	\$ (10,000,000.00)	\$ 12,130,793.80	\$ 1.86
\$ 12,500,000 ⁽²⁾	\$ 22,130,793.80	\$ (12,500,000.00)	\$ 9,630,793.80	\$ 1.48

⁽¹⁾Based on outstanding Common Shares of 6,509,057. ⁽²⁾A Deficiency exceeding \$10,000,000 provides both of the parties a right to terminate the Merger Agreement.

\$3.17 per share. In view of our current and anticipated performance, it is likely that the Deficiency will continue to increase in size and the amount that you will receive will be further reduced. There can be no assurance that the Deficiency will not increase substantially between the date of this proxy statement and the date that the Adjustment Amount and the resulting Per Share Merger Price is determined.

Source: DEFM14A filed on October 10, 2007, with the Securities and Exchange Commission.

Unusual Forms of Payment

Several other forms of payment are similar to seller financing. They are the placement of a portion of the merger proceeds into escrow to cover contingencies and the distribution of contingent value rights. Both forms of payment are used when there is a large element of uncertainty about some aspect of the acquired business. For example, funds are placed in escrow when there is a fundamentally different assessment between the target firm and the buyer about the risk of an aspect of the business. For example, a bank that has a division specializing in underwriting loans to boats may have a higher level of confidence in the loss risk of these loans than a buyer of that bank. Splitting the risk may not be acceptable—the buyer will still fear overpaying, whereas the target firm will feel it is not getting enough. A portion of the merger consideration is placed into escrow for a certain period of time until the actual losses, or lack thereof, become apparent. If there are no losses, the escrow will be distributed in full. If there are losses, the escrow will be reduced, and in some cases, there may be no distribution out of the escrow.

Another form of payment for uncertain future payments is done through contingent value rights (CVRs). A contingent value right pays the former target shareholders additional consideration if the anticipated but uncertain revenue is generated.

Contingent Value Rights

Contingent value rights have gained in popularity in recent years. For a long period of time they were relegated to the footnotes of merger and acquisition activity. Their most common use, albeit rare, was in the biotech sector where potential outcomes follow bimodal distributions. A notable exception was the acquisition of Information Resources, which stood to benefit from an antitrust judgment.

When Information Resources, Inc. was acquired by private equity funds Symphony Technology and Tennenbaum & Co. in late 2003 for \$114 million, it was in litigation with the Dun & Bradstreet Corp., A.C. Nielsen Co., and IMS International, Inc. over certain anticompetitive practices by A.C. Nielsen that had kept Information Resources out of the European market. Information Resources was seeking damages in the amount of \$350 million, to be trebled for punitive damages. The trust was structured so that Information Resources' former shareholders would receive 68 percent of all proceeds up to \$200 million and 75 percent above \$200 million, with the remainder going to the new owners of Information Resources. Due to the highly uncertain outcome of the litigation, the buyers were unwilling to risk paying the public shareholders a large amount that they might not be able to recover if they were to lose the litigation. Similarly, the public shareholders were not willing to sell Information Resources if they could potentially recover an additional \$1 billion through litigation.

The CVR paid \$0.7152 per share in May 2006, the shareholders' share of the aggregate settlement of \$50 million minus expenses. An interesting twist on the Information Resources' CVRs is that they were traded publicly on the over the counter bulletin board. This additional liquidity benefited shareholders who wanted to sell at the prevailing market price. In contrast, escrow arrangements are not traded publicly. It is not possible to liquidate them. Their holders must wait until they pay out.

More recently, CVRs have been used in large transactions. In September 2008, Fresenius Medical Care acquired APP Pharmaceuticals Inc. for \$3.7 billion (\$23 per share) plus a CVR that would have paid shareholders an additional \$6 per share if APP had met certain earnings before interest, taxes, depreciation, and amortization (EBITDA) thresholds over the three years after the acquisition. Unlike the CVRs of Information Resources, APP's were not structured as a trust but as a listed debt security of a subsidiary of Fresenius under an indenture that traded like a stock. Unfortunately, the goals were not met and the CVR expired without any payout. During its lifetime, the CVR had been extremely volatile, a property that appears to be common to these securities.

One such CVR was issued by Sanofi to let the shareholders of Genzyme benefit from the upside of its multiple sclerosis drug Lemtrada. Five payments were to be made upon approval of the drug by the FDA and when the drug sales reach certain milestones (Table 7.1). The CVR had several interesting features: Sanofi agreed to report relevant sales data quarterly, and retained the right to purchase CVRs in the open market—an indication that the company saw the likelihood that this CVR may have payouts. Importantly, in September 2012 Sanofi launched a Dutch tender offer to acquire shares between \$1.50 and \$1.75 per CVR. Of the 86.8 million CVRs Sanofi

TABLE 7.1 Milestone Payments of the Sanofi/Genzyme CVR

Lemtrada Milestone	Payment (\$)	Additional Condition
FDA Approval	1.00	Approval by March 31, 2014
\$400 million in sales	2.00	Sum of sales in certain countries within four consecutive calendar quarters following approval
\$1.8 billion in sales	3.00	Global sales in any four consecutive calendar quarters
\$2.3 billion in sales	4.00	Global sales in any four consecutive calendar quarters
\$2.8 billion in sales	3.00	Global sales in any four consecutive calendar quarters
Other Milestone		
Year 2011 Production	1.00	Production levels for Cerezyme and Fabrazyme [This milestone was not met]
Maximum Total	14.00	At the time of writing, the maximum was \$13 since one milestone had not been met

offered to purchase, only 40 million shares were tendered. Subsequently, Sanofi was rumored to have acquired shares in the open market. Nevertheless, the CVR was highly volatile, as can be seen in Figure 7.2. In November 2013, the Division of Neurology Products of the FDA published a report in which three evaluators expressed concerns about the safety profile of the drug as well as the data from trials. The CVR price fell immediately.

Another CVR that caught the attention of arbitrageurs is that of Celgene, which is based on sales of the drug Abraxane through 2025. This is an unusually long time for a CVR issued in the year 2010. CVRs have also been used outside the United States. For example, in the £12.5 billion acquisition of British Energy Group plc by the French energy group EDF in the year 2009, shareholders and the acquirer could not agree on the future prospects of the target. By issuing a CVR with a face value of £289 million under the moniker “Nuclear Power Note” the different viewpoints were reconciled.⁴ The CVR is linked to British Energy’s output as well as energy prices and EDF is required to make payments for 10 years. However, in the case of the EDF, CVR concerns have been raised about the ability of holders to seek recourse against EDF in the case of a breach of covenants. For now this is a merely hypothetical debate, as no such breach has been alleged. Nevertheless, this uncertainty will remain until a test case is litigated in English courts.

Further problems of CVRs arise from their lack of liquidity. In the past, many CVRs remained untraded, but in recent years CVRs have been listed.

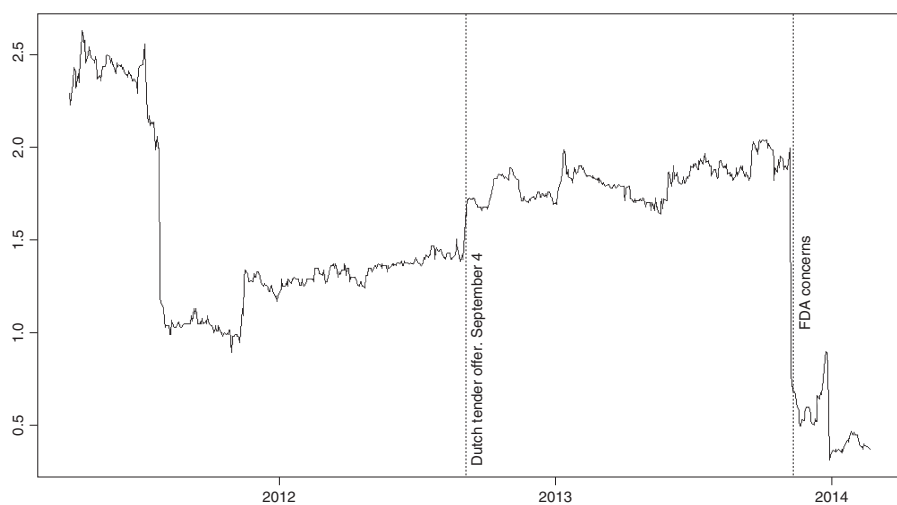


FIGURE 7.2 Price of the Sanofi/Genzyme CVR

Nevertheless, even though the potential payout may be substantial, the low probability of receiving such a high payout means that their market capitalizations remain small. In addition, trading liquidity is limited. As a result, these are securities that are of interest only to a small segment among market participants.

CVRs are efficient and flexible tools that can help shareholders obtain fair value when a part of the business has considerable upside that is very uncertain. Unfortunately, few boards consider these instruments when they negotiate a sale. Many boards are probably unaware of their existence, although their increasing prominence over the last few years is likely to change this. Others are swayed into believing that uncertain outcomes must be discounted into small present values. Although that is correct in a statistical approach, it does not make sense to leave a large windfall to the buyer.

CONFLICTED ROLE OF INVESTMENT BANKS

Until recently, the world of finance was separated into two types of institutions: commercial banks that make loans and investment banks that trade and underwrite securities.

This distinction goes back to the instigation of the Glass-Steagall Act in 1933, when commercial banks and investment banks were separated in order to prevent some of the financial disasters that had struck during the Great Depression: Member banks of the Federal Reserve were prohibited from buying securities for their own account and from “issuing, underwriting, selling, or distributing, at wholesale or retail, or through syndicate participation, stock, bonds, debentures, notes or other securities” (Section 16). Similarly, investment banks were prohibited from engaging “at the same time to any extent whatever in the business of receiving deposits” (Section 21). By the 1990s, pressures arising from the evolving nature of the banking business made the separation of commercial and investment banking appear more and more anachronistic. This led to the partial repeal of Glass-Steagall through the Gramm-Leach-Bliley Act of 1999. Interestingly, Sections 16 and 21 were both left unchanged in the repeal. Instead, the two revoked sections, 20 and 32, deal with banks’ ownership of investment banking subsidiaries and the interlock of banks’ management with that of securities firms. Commentators often miss this subtle distinction.

Today, the goal of commercial banks is to generate fees from both their commercial and their investment banking operations. A good illustration of their business philosophy is provided by former Citigroup CEO Charles “Chuck” Prince, who said, with unfortunate timing just weeks before

the 2007 subprime meltdown began, “When the music stops, in terms of liquidity, things will be complicated. But as long as the music is playing, you’ve got to get up and dance.” By mid-2008, Citigroup had written off \$69 billion and raised \$36 billion in cash, and Chuck Prince was no longer its CEO.⁵

Another separation within financial institutions that is relevant for arbitrageurs occurs within investment banks. It concerns the distinction between the advisory and the underwriting activities of the bank. Underwriters earn their fees from the placement of securities with their clients, whereas bankers earn a fee for advising firms on the takeover. Typically, a banker will:

- Advise the target on strategic options well before a merger has been decided upon; this is often part of an ongoing relationship with the firm’s executive.
- Assist the firm in selecting merger partners.
- Help with the negotiations.
- Value the firm and the principal terms.
- Issue a fairness opinion.

Investment banks have gone to great lengths in recent years to separate their underwriting businesses from their advisory activities. In street jargon, Chinese walls or firewalls keep personnel in the different divisions from talking to each other about pending deals. Nevertheless, the walls are not always as strong as one would hope.

In the 2010 acquisition of Rural/Metro Corporation by Emergency Medical Services, the blurring of the distinction between investment banking and commercial banking turned out to become expensive for the Royal Bank of Canada (RBC). It was acting as financial adviser to the board of directors while also providing financing in the acquisition. As a result, RBC would get paid \$5.1 million for its advisory services. This conflict in itself is not unusual and might not have mattered had the particular circumstances in this merger not included several additional conflicts. Two directors of Rural/Metro had conflicts of interest that made them favor a rapid sale over a longer-lasting value enhancing process, which the CEO wanted to implement originally. Moreover, RBC was also interested in providing financing for the buyer, private equity firm Warburg Pincus, for which it would receive an additional \$20 million in fees. To make matters worse, the parent company of the acquirer was putting itself up for sale at the same time, and RBC stood to earn a further \$35 million in fees from that transaction. A potential acquirer of the parent would not participate in an auction for Rural/Metro as it would end up owning the combined entity

anyway. This lack of competitive bidding hurt shareholders of Rural/Metro. After lengthy litigation, the Delaware Chancery Court held RBC liable for damages to Rural/Metro shareholders⁶ and might have to pay as much as \$250 million once damages are calculated. To add insult to injury, when it came to the financing of the transaction, RBC did not win the mandate and only made its advisory fees of \$5.1 million.

To complicate matters further, investment banks often also take on the role of buyer. Aware of the negative perception that clients will get when a bank acts as buyer, adviser, and underwriter at the same time, some investment banks have spun off their private equity divisions into separate firms.

As a result, today banks play a dual role in mergers: They wear the investment banker hat and also that of the provider of financing. As such, they are slowly drifting toward the European banking industry's model of universal banks.

Merger and acquisition (M&A) advice is a major contributor to investment banks' profits and is particularly popular because, unlike trading and principal investments, providing advice requires little capital and hence boosts not just earnings but also return on capital. In the year 2013, global investment banking revenues amounted to \$76 billion, of which roughly \$17 billion came directly from M&A advisory work.⁷

In most instances, arbitrageurs have little to worry about banks' activities because mergers get funded and the merger closes. In some instances, however, the conflicts within banks will affect the outcome of a merger. Arbitrageurs must be well aware of the potential problems that can arise from the multiple roles that banks play.

A low point illustrating the drive to get the deal done was reached by investment banking legend Bruce Wasserstein in the 1989 sale of publishing firm Macmillan, Inc. in a leveraged buyout to its managers and private equity firm KKR. The litigation accompanying this merger gives a rare and interesting insight into the negotiation process. It is not uncommon for the most dicey aspects of questionable practice to be revealed only in court. How else would shareholders or the public ever know?

What had started as an attempted management buyout⁸ of the undervalued firm Macmillan by its CEO, Edward P. Evans, turned quickly into a full-blown hostile takeover battle when Robert M. Bass, at the time known primarily as a greenmailer and raider, intervened with a \$64 per share takeover proposal.⁹ The board had formed a special committee that retained Lazard Freres as its financial adviser. Lazard valued Macmillan at \$72.57 per share, but the recapitalization proposal at only \$64.15 per share. The investment banking firm Wasserstein, Perella was retained by Macmillan's management as a financial adviser. It advised the board that Macmillan should be worth between \$63 and \$68 per share, and the

board announced a recapitalization plan worth \$64 per share in lieu of endorsing Bass's takeover. In response, Bass increased his offer to \$73 per share. Only 10 days after their \$63 to \$68 valuation, Wasserstein, Perella issued a new valuation opinion, now claiming that Bass's \$73 proposal was inadequate and that Macmillan was worth more. Lazard also issued a new valuation opinion that came to the same conclusion. The Macmillan board rejected the increased Bass offer.

The distinction between Lazard's role as adviser to the special committee and Wasserstein, Perella's advisory function to the full board is critical. The full board included Evans, who had strong conflicts of interest because he favored a transaction that involved himself and KKR. The special committee, however, was supposed to look out for the interest of shareholders.

Management continued pursuing its own buyout plan and brought KKR into the game. KKR was given access to confidential Macmillan information in order to perform due diligence. In the meantime, another bidder entered the scene: Robert Maxwell made several proposals for cash tender offers for Macmillan, bidding up to \$86.60 per share. Management first ignored him but eventually decided to put the company through a formal auction process.

Maxwell knew that he was not welcome and that management preferred to buy Macmillan itself with the help of KKR. He even went so far as to call the auction "rigged." It turned out that his opinion was correct.

Wasserstein, Perella set out to manage the next round of bidding. Maxwell proposed a \$89 per share all-cash buyout, while KKR offered \$89.50 consisting of only \$82 cash and the remainder in subordinated debt securities. Moreover, the KKR bid was subject to a number of conditions, including lockup and no-shop clauses, that effectively made it impossible for Macmillan to accept Maxwell's bid. Since KKR's proposal had a debt component with face value of \$7.50 but uncertain market value, whereas Maxwell was to pay all cash, albeit marginally less, the financial advisers called both proposals a tie.

Macmillan's CEO then called KKR and tipped them off about Maxwell's bid. In order to create an appearance of a fair bidding process, Bruce Wasserstein scripted a text that he read to both KKR and Maxwell. He informed them that he was unable to recommend either bid to management and gave them a deadline for submitting any new offers. However, he gave KKR valuable additional information: They would have to make additional concessions if they wanted a lockup. Maxwell was not informed of KKR's special tip or that Evans had told KKR about his bid.

In telephone conversations that followed, Wasserstein gave Maxwell the impression that he was already the high bidder. Maxwell decided not to increase his bid to avoid bidding against himself. KKR submitted a revised bid of \$90 per share. During the day after the auction deadline, negotiations

were held with Maxwell and KKR over other aspects of their bids. Only KKR was encouraged to increase its price, which it did to a marginally higher \$90.05. Maxwell was left with the impression that he had submitted the highest bid and was not encouraged to submit a higher proposal.

In the board meeting that followed the end of the auction, Wasserstein recommended KKR's bid, even though Wasserstein was the adviser to the full board, including Evans, rather than to the special committee that ran the auction process. Lazard did nothing to intervene. Unaware of the unequal treatment of KKR and Maxwell during the auction process, the board decided to accept the higher bid by KKR. As part of the acceptance, it awarded KKR a lockup agreement that allowed KKR to acquire subsidiaries of Macmillan at a discount, should Maxwell prevail eventually.

In a subsequent SEC filing, KKR disclosed that it had been tipped off by Evans about Maxwell's higher bid during the auction. In response to this information, Maxwell increased his bid to \$90.25 in cash. Nevertheless, the board, by now aware of Wasserstein's and Evans's shenanigans, maintained that the KKR proposal was superior to Maxwell's.

In the ensuing litigation, Maxwell scored two victories: He had Macmillan's poison pill¹⁰ overturned and the lockup agreement with KKR invalidated. KKR had already received two-thirds of Macmillan's shares in its tender offer, but following his victory in court, Maxwell was able to complete his tender offer. Shareholders preferred his all-cash bid to KKR's mixed cash/debt payment and withdrew their shares from KKR, tendering them to Maxwell instead.

The Macmillan example illustrates to what lengths some advisers are willing to go to help their clients complete deals that are not in the interests of shareholders. Even though Macmillan is a transaction from 1989, conflicts of interest continue to exist among shareholders, acquirers, and financial advisers. The circumstances today are different than the facts in Macmillan. Few financial advisers will favor their client as openly as Wasserstein did in 1989. But there are other opportunities for advisers to favor one side over another, as will be shown shortly in the discussion about fairness opinions.

A different conflict of interest appeared in the midst of the crisis in the 2007 attempt by shoe retailer Finish Line to acquire its competitor Genesco. Genesco had been the object of a bidding war between Finish Line and Footlocker that saw bids surge from an initial \$46 by Footlocker to a winning \$54.50 by Finish Line. However, the timing of Finish Line's highly leveraged proposal coincided with increasing difficulties by investment banks to sell merger-related leveraged loans in the secondary market. Finish Line's bankers, UBS, would have suffered a loss if it had sold the loans it had committed to providing Finish Line.

UBS and Finish Line attempted to terminate the merger agreement by declaring that Genesco had suffered a "material adverse effect." However,

the merger agreement had a very narrow interpretation of the term, and it was clear that a material adverse effect did not apply in the case. UBS had to find another excuse to avoid having to fund the transaction.

Two arguments were used against Genesco: (1) that Genesco had committed fraud by not providing Finish Line with financial results for May 2007, which showed its deteriorating performance; and (2) that the combined firm would be insolvent due to the large amount of debt used to finance the merger. Therefore, UBS should not be required to fund the deal.

The courts dismissed the fraud claim, but the insolvency argument was never litigated. Instead, UBS and Finish Line settled the litigation. UBS paid \$136 million to Genesco, and Finish Line issued preferred stock to Genesco convertible into 10 percent of its outstanding shares. Instead of Finish Line owning Genesco, Genesco ended up owning a big stake in Finish Line.

The irony is that while UBS was arguing that Genesco had suffered a material adverse effect, it fought simultaneously the opposite battle in the acquisition of Sallie Mae by private equity firm J. C. Flowers. While Flowers argued that Sallie Mae had suffered a material adverse effect, UBS argued that it did not. Had the Sallie Mae acquisition closed successfully, UBS would have made \$50 million in fees.

UBS's argument about insolvency is rooted in a real provision of bankruptcy law. There is indeed a section in the bankruptcy code that can be a problem for a secured lender in an LBO. Section 548 is a fraudulent conveyance rule providing that a secured lien can be voided if the company was insolvent at the time the lien was given, or became insolvent as a result of the lien; had "unreasonably small capital"; or incurred debts beyond its ability to pay. To complicate matters further, the definition of *insolvency* in the bankruptcy code differs from that under GAAP. Under GAAP, a company is solvent when its assets are sufficient to pay debts as they occur. Under the bankruptcy code, however, *solvency* means that a company must have sufficient assets at fair value to pay all probable liabilities. In a leveraged buyout, this solvency test is much harder to meet because LBOs are structured on the basis of future cash flows rather than present assets, and liabilities often exceed hard assets, in particular if the acquisition price included payment for goodwill and other intangibles.

The recent innovation of stapled financing can also be problematic. Banks advising the target can have an incentive to push the firm to accept a transaction that is not in its best interests, or that has too low a price, because the bank will earn fees from providing financing for the deal. Even if the provider of the financing and the adviser to the seller are not the same bank, it may be to the advantage of the target's adviser to push the transaction if it expects to be part of the syndicate that will provide financing.

The club of banks that provide financing to mergers is a small world involving the same firms and bankers. Banks are well aware that their

advisory revenue depends on getting deals done and that their revenue from financing depends on other banks getting a deal done. If one bank advises a target on a deal, it may not be part of the syndicate that provides financing for the same transaction; however, it will be part of future syndicates involving other targets. Because there is a limited number of banks that syndicate financing, no bank can afford to be too harsh in its advisory role, or it would jeopardize its ability to join future financing syndicates.

FAIRNESS OPINIONS

If Bruce Wasserstein's fairness opinion is an example for the conflicted rule of investment banks, it is also a sign of the sloppy work that sometimes is performed by investment bankers when drafting fairness opinions.

Fairness opinions are issued by an investment bank as an independent party to assure the board of directors of a target that the merger consideration is "fair from a financial point of view." The use of fairness opinions can be traced back to a Delaware Supreme Court ruling in *Van Gorkom*, discussed in more detail in Chapter 8, in which it found that a board of directors had not made a good faith effort to take a well-informed decision. The court suggested that reliance on a fairness opinion could have solved that problem.

Today, fairness opinions have become a standard ingredient in mergers, even though the *Van Gorkom* court stated clearly that they are not a legal requirement. Most boards are unaware of this detail; they are convinced by their advisers that a fairness opinion is needed and believe that it is a checkbox requirement that, if fulfilled, will show that they have acted in the best interests of shareholders. The fairness opinion is provided by the same investment bankers who advise the company on a merger, and they can charge an additional fee for this extra service.

The problem with fairness opinions is, of course, that the same bank that advises the target on whether to merge also provides the opinion on the fairness. If it were to find that the merger is unfair and the merger were not to happen, then the investment bank would be paid less. Therefore, fairness opinions must always be taken with a grain of salt. In many cases, they are irrelevant and constitute no more than bureaucratic paperwork that justifies extra fees.

Fairness opinions will always conclude that a merger is fair to the shareholders of the target. Wasserstein, Perella's opinion about the fairness of the Macmillan buyout, which flip-flopped as the bidding war progressed, is not uncommon. Fairness opinions will go to great lengths to dismiss their own finding that a transaction is actually quite unfair. When Netsmart was acquired by its management team, with the backing of private equity funds

Insight Venture Partners and Bessemer Venture Partners, the fairness opinion issued by investment bank William Blair found an implied transaction equity value “by the discounted cash flow analysis ranged from approximately \$142 million to \$202 million, as compared to the implied transaction price for Netsmart of \$115 million.” William Blair then dismissed its own analysis by claiming “that the Discounted Cash Flow Analysis was a less reliable barometer of value than other methodologies based on historical results.”¹¹

This is completely counter to the typical valuation exercises performed in buyouts, where valuation by discounting cash flows is the preferred methodology. Netsmart was going through a rapid growth phase at the time of the transaction. Management forecast annual growth of 14.6 percent for the next few years, with a quadrupling of earnings before interest and taxes (EBIT) and EBITDA growth of 2.7 times. It is clear that a valuation based on historical performance will undervalue a company undergoing such rapid growth and improvement in performance. William Blair’s claim that historical methodologies are superior to a forward-looking method such as discounted cash flows can be explained only by its own favoritism of management over shareholders. The litigation about Netsmart’s buyout had other important legal implications, which are discussed in Chapter 9.

The fairness opinion usually is rendered by the same financial adviser that has been retained by the target to arrange the sale. The investment bank has two sources of revenue: a percentage of the transaction value, plus a fixed fee for rendering the fairness opinion. Typical fees for fairness opinions range from a few tens of thousands of dollars in small transactions to several hundreds of thousands of dollars in larger mergers. The fee based on a percentage of the transaction size is the larger amount of the two. Therefore, it is not surprising that the fairness opinion will always conclude that a transaction is fair. It would be in the best interest of shareholders if the fairness opinion were rendered by a different firm than the adviser that arranges the transaction. However, under the current disclosure regime, this is not required. Instead, it is sufficient if the fee arrangements are disclosed.

Particularly egregiously misleading are fairness opinions where companies create financial projections specifically to justify a valuation in a fairness opinion. These companies effectively have two sets of books: internal projections that reflect what management really believes the prospects for the business are and external projections that are shares with investment bankers and the board so that a transaction can be deemed “fair.” The author is familiar with instances where this has occurred, and the real projections were revealed only during shareholder litigation. It is possible, and likely, that even the investment bankers were not aware that two sets of books existed.

Due to these problems, it is not surprising that when investors perfect appraisal rights (discussed in Chapter 13), courts normally all but ignore

valuations from fairness opinions. Instead, valuation experts are retained to come up with valuations. In theory, these experts simply duplicate the work performed by the investment bank. In practice, however, courts do recognize that fairness opinions are fraught with conflicts to the point that they are of little practical use.

SYSTEMIC RISK

So far, the discussion about availability of financing has focused on the funding of the particular merger under consideration. However, there are times when financing is independent of the characteristics of a transaction but becomes difficult to obtain for any merger. This occurs roughly once every decade and is known as a credit crunch.

Credit crunches generally are triggered by poor oversight of banks, whose lending standards decline and who make increasingly risky loans. Some trigger, such as one large default, leads to a sudden reassessment of all lending risks by all banks at the same time. The result is a drastic reduction of the availability of credit.

The merger boom of the 1980s came to an abrupt end when the junk bond market collapsed. First Boston was unable to place \$475 million of 15 percent bonds of the Ohio Mattress Company. The junk bond market had been jittery since the bankruptcy of LTV Corporation in 1986, which was the largest bankruptcy at the time. Spreads widened for several months but returned to normal shortly thereafter. By early 1989, the supply of new junk bond issues had increased to levels that made it difficult for the market to absorb at the current spreads. Some high-yield issuers responded by withdrawing their offerings and launching new ones at much higher yields of 15 percent and higher. But even at these levels, Ohio Mattress failed to place its bonds.

The going-private boom of the new millennium came to a sudden stop when the effects of the subprime crisis began affecting banks' ability to fund buyout transactions. At the same time, investors became wary of any debt issued for buyouts and were unwilling to acquire such debt from banks. Therefore, the entire debt-funding machine came to a halt. A chain reaction was set in motion: Funding vehicles such as CLOs or structured investment vehicles were unable to obtain short-term funding in the money markets and had to end their purchases of leveraged loans. This, in turn, left banks with large inventories of loans that could not be sold and whose market prices were dropping. As a result, banks curtailed their lending to leveraged borrowers, which ended many pending buyouts. Figure 7.3 shows the impact of the credit crunch on spreads in the leveraged loan market. Within a few months, spreads widened from slightly over 200 basis points to over 500.

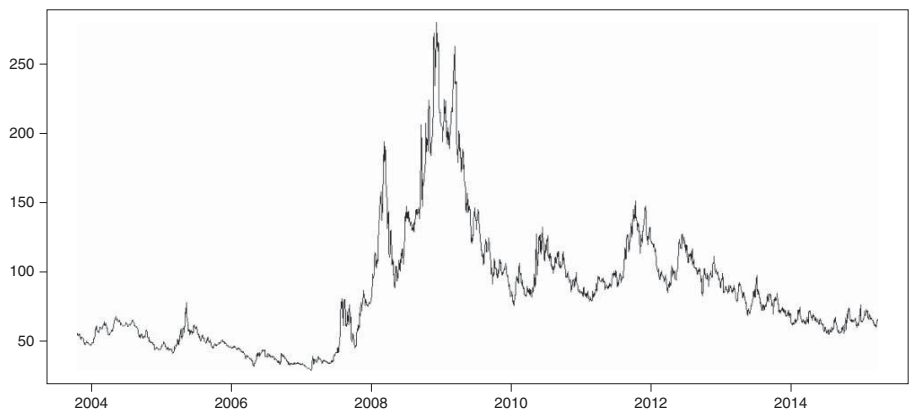


FIGURE 7.3 Leveraged Loans: All in Spreads

Legal Aspects

Merger arbitrageurs must combine an investor's mindset with that of a strategy consultant and a lawyer. This makes merger arbitrage an art rather than a science. It also implies that it is very difficult for quantitative models to replicate a merger arbitrage strategy. Most references on arbitrage focus on the mechanical aspect of merger arbitrage, which we discussed in Part I. Antitrust issues are also popular among writers about the topic. However, the full richness of the arbitrage process only becomes apparent when one considers the legal aspects.

Each country has its own set of rules that apply to domestic mergers, and within some countries different jurisdictions can coexist. For cross-border mergers, it is obvious that the laws of at least two countries will apply; with the growth of globalization, however, even mergers between domestic firms that appear to be domestic affairs at first sight can fall under the jurisdiction of the competition authorities of foreign governments. Competition regulations will be discussed in Chapter 12 more fully. This section will address other legal aspects of the merger process.

Global merger legislation falls within three parallel legal universes (Figure 8.1). The classic distinction in common law and civil law jurisdiction is only partially useful in merger arbitrage. The overall legal framework in any country certainly follows the logic of civil vs. common law. However, when dealing with mergers this distinction is not always applicable. For example, most civil law jurisdictions follow a takeover framework assimilated from the United Kingdom's Takeover Code. Commonwealth countries tend to follow the City Code rather closely, while other countries pick and choose some of its elements and incorporate them into their legal systems. Continental European civil law countries belong to this latter category. On the other extreme, the United States has developed a distinct system of corporate and M&A laws that bear little resemblance to the rest of the world. Canada follows the tradition of British corporate law but has adopted M&A laws that resemble the U.S. tradition more than the U.K. Takeover Code. Although the United States and Britain share a long history of common law traditions, they find themselves at opposite sides of the spectrum as far as the mechanics of takeover legislation is concerned.

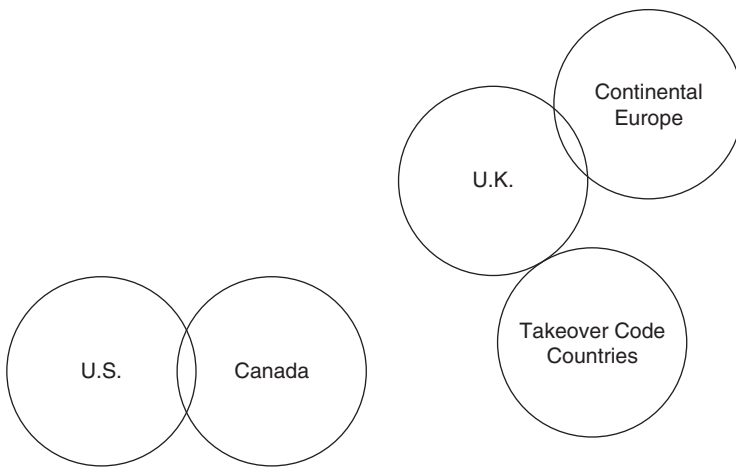


FIGURE 8.1 Legal Universes for Mergers and Acquisitions

In fact, European civil law jurisdictions resemble the U.K. common law takeover regime more closely than the United States, despite the common law heritage that these two countries share.

The law of mergers and acquisitions is extremely specialized, and a comprehensive description is beyond the scope of this chapter. Most legal texts covering mergers exceed this book in length. Therefore, this section gives a limited overview of some of the key issues. Readers interested in delving deeper are strongly encouraged to consult the extensive legal literature that exists about this topic.

The legal framework is complicated by a multitude of overlapping laws and regulations that apply to mergers. It would be an exaggeration to suggest that an arbitrageur must be a lawyer. Legal training may be helpful, but a good understanding of the principles is sufficient for most arbitrage investments. Most arbitrageurs will do well using some common sense and a sharp eye for the wording of key provisions in merger agreements.

Aside from antitrust legislation, which is a world of its own, there are at least four levels of legislation that arbitrageurs must be familiar with:

1. *Supra-national regulations.* Most notably, these are rules of the European Commission (EC) such as the directive on the taxation of mergers or the directive of cross-border mergers. These directives are supposed to have been incorporated into national laws by each EU member state. However, sometimes the implementation can conflict with the directives or their intent, in which case companies that are

affected adversely can seek relief through the legal system. At the time of this writing, the EC was gaining a negative impact on merger arbitrage as the worldwide financial transaction tax was taking shape. It may have an impact on the ability of arbitrageurs to provide liquidity to the market after a merger announcement.

2. *National regulations.* In the United States, they are promulgated by the Securities and Exchange Commission (SEC). Like all other SEC rules, the principle of full disclosure underlies these regulations. Almost anything goes as long as it is disclosed to shareholders. The SEC does not judge the fairness of a merger or the adequacy of the consideration received. Key SEC rules are discussed in Chapter 12.
3. *State or provincial laws.* In the United States, the states play a crucial role as companies incorporate in a given state. There is no such thing as a national corporation. Canadian provinces play a similar role, while most other countries have national company laws and few relevant regulations below the national level. In the rest of the developed world, provincial authorities have no significant influence on mergers or the arbitrage process.
4. *Court decisions.* In the United States more so than in other countries court decisions are the key to understanding the law of mergers and acquisitions. Although state corporate codes set the framework under which mergers take place, it is the precedent of case law that sets the relevant standards. Judges will look to state statutes, precedent, and SEC rules when making decisions. Readers may be surprised that SEC rules would come into play in a state court, but judges occasionally refer to a company's SEC filings and its compliance with SEC rules in their decisions.

The most important jurisdiction is, of course, Delaware. Judges in other states will look to Delaware's decisions for guidance but will also try to maintain a certain independence.

The venue for these decisions is almost always a state court, often the state of incorporation, and otherwise the state in which the corporation has its main place of business. Lawyers for plaintiffs sometimes suggest litigating in western states if a company has its headquarters there, under the theory that courts in those states are more shareholder-friendly than courts on the East Coast. Nevertheless, the law applied will be that of the state of incorporation. Any difference in outcome is due to a different interpretation of facts and circumstances. I will outline some key court decisions later in this chapter.

5. *Exchange regulations.* Listing requirements can influence the merger process. For example, the New York Stock Exchange requires a shareholder vote from companies that seek to issue new shares amounting to more than 10 percent of the outstanding. Therefore,

if a company is listed on the NYSE, its shareholders will have a say in case of a highly dilutive stock-for-stock merger, whereas shareholders of NASDAQ-listed companies do not have this privilege. Similarly, the Düsseldorf stock exchange restricted in the year 2015 the delisting of shares, making it harder for companies to coerce shareholders to tender their shares in an unfavorable acquisition. However, investors in companies listed on the Frankfurt, Munich, Stuttgart, Hamburg, or Berlin exchanges can potentially suffer such a fate.

6. *Company-specific contracts.* These are mostly found in the bylaws or articles of incorporation through anti-takeover provisions, but restrictions on takeovers can also be found in less obvious places, such as bond or loan covenants or employment agreements. It is common to see so-called change of control clauses in bond covenants. If the issuer is acquired, the bond becomes due immediately.

It should be noted that change-of-control clauses were, until recently, very uncommon in European bond covenants. As a result, highly rated companies with low debt loads could be taken over and leveraged by the new owners. The bonds continued to pay the low interest rate assigned at issuance, but rating agencies downgraded the bonds to junk level. Effectively, the cost of the buyout was borne by the widows and orphans who suffered a significant capital loss on their high-risk, low-yield bond holdings. A prominent example is the buyout of Danish cleaning firm ISS Global A/S by entity affiliated with Goldman Sachs and the Wallenberg family. Within hours of the announcement, one bond lost 25 percent of its value (see Figure 8.2). A few weeks later, the rating agencies reacted to the buyout and downgraded ISS's debt from a BBB investment grade rating to a junk level of B. The losses suffered by the bondholders effectively were a wealth transfer from widows and orphans to Goldman Sachs and the Wallenbergs.

It is clear that anyone with advance knowledge of the merger would have profited enormously from a short position in ISS bonds or by buying protection on ISS bonds in the credit derivative markets. Indeed, it was rumored at the time that such insider trading through credit derivatives was rampant in European markets, where regulatory enforcement was completely absent and penalties are much lighter than in the United States. The earlier warning against insider trading can only be reiterated in this context.

Change-of-control clauses can also be found in employment agreements of key executives. Typically, they provide for a lump-sum payment (golden parachute) when the firm is taken over. Similarly, stock options and restricted stock vest upon a change in control. These issues are discussed in more detail in Chapter 9.

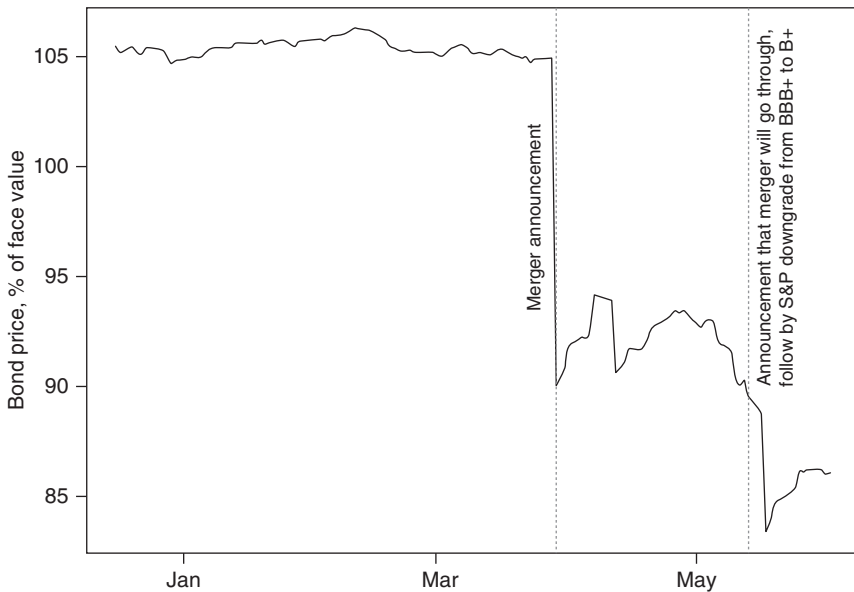


FIGURE 8.2 Price of the ISS Global A/S 4.75% Bond Due 09/10

Merger law evolves discontinuously. It remains static during periods of little activity but changes rapidly in each merger boom. The key decisions both in the United States and United Kingdom emanate from the 1980s, with important changes occurring during the more recent merger boom of the new millennium.

MERGER PROCESS

Although arbitrageurs take their positions mostly after a merger has been announced, it is helpful to understand the legal requirements that companies have to follow in the adoption of the merger. A poorly conducted process is open to attack in the market or the courts. In this case, there are three possible outcomes:

1. *The deal is delayed or collapses.* An outright collapse rarely happens, but delays can occur and depress the annualized return (see Chapter 5).
2. *The buyout price increases.* This is the dream scenario in every deal.
3. *Another buyer gets involved.* This can also lead to a higher price, but as in all contested transactions (Chapter 5), an arbitrageur may suffer a loss if a short squeeze develops on the short side of the arbitrage.

Maximizing shareholder value has become the holy grail of modern management. Unfortunately, all too often, managers cite shareholder value to justify many strategies that are more likely to destroy rather than create it. "Shareholder value" has become a somewhat empty phrase used to justify any corporate activity, from the expansion of new productive capacity to country club memberships for senior executives. Not surprisingly, mergers and acquisitions are also done in the name of shareholder value. As with country club memberships and corporate jets paid for by the firm in the name of realizing more business opportunities, it is often difficult for outsiders to discern the real motive behind a merger: Will it benefit ultimately shareholders or mainly the company's executives?

In theory, the decision to sell a company lies with shareholders, who vote in a shareholder meeting. In practice, most shareholders vote with the board, so that the *de facto* power to sell a company rests with its board. Proxy advisory firms also issue voting recommendations in favor of the board's recommendation except in rare cases where opposition from shareholders against a merger has reached a certain threshold. The board, in turn, itself relies to a large extent on representations made to it by management executives. Conflicts of interest exist whenever a company is up for sale. Economists refer to this as a principal/agent problem. The shareholders as principals hire an agent (manager) to act on their behalf but cannot be sure that the agent actually will act in their interest. Management and board members may be more interested in keeping their jobs than in maximizing shareholder value. Stock options may help to eliminate this conflict by aligning the interests of managers and shareholders: If managers are paid in stock, then they should act as if they were shareholders. In reality, options and share ownership can introduce new conflicts of interests. For example, options usually vest fully and are cashed out when a company is sold. A manager with sizable unvested option holdings may be more interested in selling the company at a lower price if the options vest immediately than risk waiting for several more years until the options vest. Given such complexities in modern corporations, it can be very difficult, if not impossible, for outside shareholders to understand the true motivations of management.

Two approaches to handling the principal/agent conflict in mergers are implemented throughout the world. The first relies on shareholders making the decision on whether to sell. This approach is taken in tender offers globally and mergers in the United States. The other approach relies on court supervision of the merger process. This underlies schemes of arrangement that derive from the United Kingdom legal tradition.

CORPORATION CODES

Many aspects of mergers and the arbitration process are governed by the corporation codes of the jurisdiction under which the target company is incorporated. In the United States and Canada, companies incorporate under the laws of a state or province, respectively. The most prominent is the Delaware General Corporations Law. In all other countries, corporation codes are established under national laws, even in countries that otherwise have devolved powers to subnational provinces such as Switzerland or Belgium. Obvious special cases are, in the case of the United Kingdom, Crown Dependencies and Overseas Territories, as well as, in the case of China, Hong Kong, which have their own distinct laws. U.K. Company Law serves as the point of reference for these jurisdictions.

The good news is that corporation codes are fairly static and play no more role than to provide a general framework from which court decisions are derived. Corporations are governed by the law of the country or state under which they are formed, and hence their merger or dissolution is first and foremost controlled by the statutes of their state of incorporation. However, state codes tend to remain relatively general in order to provide maximum flexibility to their corporate citizens. Most U.S. states model their codes after Delaware General Corporate Law; even the country of Liberia follows Delaware's example. While this might appear to be a far-fetched example, arbitrageurs had to deal with Liberian corporate law in 2004, when Stelmar Shipping, a Liberian container shipping firm founded by British/Greek entrepreneur Stelios Haji-Ioannou, was acquired by Overseas Shipholding Group. Some other shipping companies traded on Western exchanges are incorporated in Liberia, so other mergers involving Liberian companies are likely to happen in the future.

Corporation codes define the decision making and management of a firm. So it is surprising that for takeovers they play a secondary role: In the United States, SEC rules are as much a driver of a takeover process as state corporation codes. In countries that have implemented a takeover code, it is obviously these rules that are the driving force in a takeover. Company law or state corporation codes determine only the mechanics of effecting a merger. The specifics of how to get there—information rights, timing, takeover defenses—depend less on corporation laws and more on the second set of rules and regulations.

Some intricacies of different codes involve not only anti-takeover provisions but also the availability of dissenters' rights for appraisals. This topic is addressed in more detail in Chapter 13. State statutes also define many anti-takeover provisions, discussed later in this chapter.

TAKEOVER CODE AND ITS DERIVATIVES

The United Kingdom's City Code on Takeovers and Mergers, or "Takeover Code" for short, is the basis for mergers and tender offers in the United Kingdom and also numerous other countries that have adopted laws that imitate it, sometimes down to minute details. Countries that follow the tradition of common law and, in particular, follow the U.K. corporation code closely, such as India, Ireland, Australia, Hong Kong, or Singapore, have adopted takeover codes that follow the U.K. precedent very closely, or have incorporated many features of the Takeover Code directly into corporate law or takeover legislation. In the following I will focus on the U.K. Takeover Code but occasionally show examples from such other countries when the similarities make them perfect substitutes.

The origins of the Takeover Code go back to the 1960s when the Panel on Takeovers and Mergers was established, originally as an advisory body, the City Working Group. Like in many other areas mission creep soon set in and what starts out as voluntary or advisory soon becomes binding. The first version of the Takeover Code was formally adopted in 1968, 15 years after Britain's first takeover, the acquisition of J. Sears & Co by Charles Clore in 1953. By the late 1950s, takeovers had become regular occurrences, and with them, many instances in which shareholders were left holding the bag. Among the more notorious instances was the 1959 takeover of Harrods, in which the priority of claims of preferred shareholders over holders of ordinary shares was violated. Throughout the 1960s, takeovers were occurring at a rate of 500 to 1,000 public companies per year. In order to preempt government regulation, the City Working Group proposed the first version of the Takeover Code in 1968. At the time, enforcement was assured through trade associations. Further improvements followed in the 1970s and 1980s. With the implementation of the EC Directive on Takeover Bids in 2004, the Panel has acquired statutory powers and both the Panel and the Code are now incorporated into the Companies Act. It should be noted that this U.K. regulation precedes the landmark Delaware rulings that govern U.S. mergers today and which I will address later.

The Takeover Code is based on six fundamental principles:

1. Shareholders must be treated equally.
2. There must be adequate and timely information.
3. An orderly market must be maintained.
4. Management cannot frustrate an offer against shareholder wishes.
5. Offers have to be realistic.
6. Disruption of the target company's business must be minimized.

In parallel to the implementation of the Takeover Code, a panel was established, officially named the Panel on Takeovers and Mergers (PTM), to supervise and regulate takeovers and the Code through an executive and two committees, the Hearings and Code committees. Decisions regarding pending takeovers are taken by the executive, which is the most relevant aspect from the point of view of an arbitrageur. The Code committee is charged with rule making while the Hearings committee handles appeals to executive decisions as well as hearing about breaches of the Code. The executive is composed of industry professionals from investment banking, brokerage, accounting and legal firms.

The Code applies to all companies incorporated in the United Kingdom as well as companies incorporated elsewhere but listed on the London Stock Exchange. AIM-listed companies are exempted.

Many of the principles of the Takeover Code have been incorporated into the laws of other members of the European Union. The Directive on Takeovers (2004/25/EC), which seeks to harmonize takeover procedures across the EU, borrows heavily from the principles underlying the U.K. Takeover Code. As a result, it is not surprising that there is a significant amount of similarity overall in takeover regimes across the European Union.

At first sight, a striking feature of the Takeover Code is the disproportionate space that rules around hostile takeovers take up. Hostile transactions represent only a small fraction of the overall merger universe, as outlined in Chapter 5. However, considering the potential for target shareholders to be forced into a transaction that undervalues the firm, it is absolutely justified that what appears to be a fringe issue generates a large amount of regulation. For comparison, while there are few formal rules about hostile transactions in the United States under Delaware General Corporate Law or SEC regulations, the ease with which transactions can be litigated in reliance on prior court rulings gives U.S. investors a comparable level of protection. The fact that the United Kingdom has codified rules about hostile transactions whereas Delaware has not is simply a reflection of the difference in the court system and should not be misconstrued as different level of protection for shareholders.

For arbitrageurs, mergers subject to the Takeover Code have several advantages over U.S. mergers in that they provide more certainty. First, the timeline of transactions subject to the Takeover Code is subject to very clear deadlines, shown in Figure 8.3(a) and 8.3(b) for schemes of arrangement and takeover offers, respectively. Of course, transactions can still be held up for regulatory reasons—in particular, delays due to competition investigations. But plain-vanilla mergers without competition risks benefit from this well-defined timing advantage.

Rule	Day	Event
2.2 CA S. 896	-28 to 0	Announce Intent Between announcement and offer: court hearing to seek directions for convening shareholder meeting
30.1	0	Offer. Start sending Scheme circular incl. timetable
Appendix 7 paragraph 7	7	Last day for revision to Scheme (Shareholder Meeting – 14 days)
A7 p3	21	Earliest date for Shareholder Meeting
A7 p3	28	Last day to send circular (but not after shareholder meeting)
CA S. 899	40	Earliest date for Court hearing to sanction Scheme
	41	Effective date (Court hearing +1) End of offer under City Code
		No need to fulfill conditions
A7 p1	55	Last date for payment (Effective date + 14 days)

FIGURE 8.3(a) Timetable for “schemes of arrangement” under the Takeover Code with relevant rules of the Takeover Code or Section of the Companies Act

The other area in which more certainty exists is clarity around the existence or nonexistence of a takeover proposal. Under the Takeover Code, target companies have to respond to market rumors and inform the market when they receive a proposal. In the United States, while there are clear disclosure requirements for material information, companies have some leeway in classifying takeover discussions as tentative or hiding behind a policy of not commenting on market rumors.

A buyer planning to acquire a company is required by the Takeover Code to make the proposal first to the board of directors of the target company, or the board’s advisers. Only after this first step can a public announcement be made. As a result of the acquisition of Cadbury by Kraft, so-called virtual bids have been curtailed. This refers to statements made by a would-be acquirer that it might consider making an acquisition proposal. Investors have wide-ranging information rights. If rumors appear in the press about a proposal, the target must disclose any discussions. A buyer has to make a public statement even before it has approached the target

Rule	Day	Event
2.2	-28 to 0	Announce Intent
30.1	0	Offer. Start sending offer document
30.2	14	If contested: last date to send defense document
31.1	21 CD+1	Earliest closing date (CD) for acceptances 8 am.: Announce acceptance levels or extension. If extensions: This applies for each subsequent CD + 1 at 8 am.
31.9	39	Last date to publish new material information such as earnings, forecasts, etc.
34	42	Can withdraw acceptance if not unconditional as to acceptances (CD + 21 days)
32.1	46	Last day to send revised offer documents (Day 60 – 14 days)
31.6	60	1 p.m.: Last time for acceptances 5 p.m.: Announce acceptances Midnight: Last time to declare unconditional
31.4	74	Earliest closing date (Unconditional + 14)
31.7	81	All conditions fulfilled (Unconditional + 21)
31.8	95	Payment (All conditions fulfilled + 14 days)

FIGURE 8.3(b) Timetable for takeover offers under the Takeover Code with relevant rules of the Takeover Code or Section of the Companies Act

company's board if the information is leaked in a rumor. An example of an announcement relating to market rumors is shown in Exhibit 8.1. In addition, even unexplained movements in a target's share price can give rise to information responsibilities. Under the Takeover Code, if shares move 5 percent in a single day the movement is considered "untoward" and a target company or the acquirer will have to publicize any planned proposals. In any announcement of a proposal, the target company must be specific and name the acquirer. The equivalent French regulations are shown in Exhibit 8.2.

EXHIBIT 8.1 F&C ASSET MANAGEMENT'S RESPONSE TO A RUMOR

Response to Press Speculation

London, 27 January, 2014: The Board of F&C Asset Management plc (“F&C” or the “Company”) notes the recent press speculation and confirms that it has received an indicative offer from BMO Financial Group (“BMO”) of 120 pence in cash per ordinary share (the “Offer Price”) for the entire issued and to be issued ordinary share capital of F&C (the “Possible Offer”). In addition, F&C shareholders will be entitled to receive and retain an ordinary course dividend of 2 pence per F&C share for the financial year ended 31 December 2013.

F&C and BMO are in advanced discussions about the details of the Possible Offer and the Board of F&C has indicated to BMO that it is likely to recommend a firm offer at the Offer Price.

This announcement does not amount to an announcement of a firm intention to make an offer and there can be no certainty that an offer will be made. This announcement has been made with the consent of BMO.

In accordance with Rule 2.6(a) of the Code, BMO must, by not later than 5:00 PM on 24 February 2014, either announce a firm intention to make an offer for F&C in accordance with Rule 2.7 of the Code or announce that it does not intend to make an offer, in which case the announcement will be treated as a statement to which Rule 2.8 of the Code applies. This deadline will only be extended with the consent of the Takeover Panel (the “Panel”) in accordance with Rule 2.6(c) of the Code.

In accordance with Rule 2.10 of the Code, F&C confirms that as at the date of this announcement, it has in issue 581,035,337 shares of 0.1p nominal value each. The International Securities Identification Number (ISIN) of the shares is GB0004658141.

In accordance with Rule 30.4 of the Code, a copy of this announcement will be available on F&C’s website at www.fandc.com.

A further announcement will be made in due course.

Source: Press release by F&C Asset Management plc dated January 27, 2014.

EXHIBIT 8.2 FRENCH REGULATION ON UNUSUAL PRICE MOVEMENTS

Section 7—Statement of intent in the event of preparations for a takeover bid

Article 223-32

Without prejudice to the provisions of Article 223-6, in particular when the market for the financial instruments of an issuer is subject to large price swings or unusual trading volumes, the AMF may require persons to publicly disclose their intentions within a set deadline, where there is reason to believe they are preparing a takeover bid, either alone or in concert with others within the meaning of Article L. 233-10 of the Commercial Code. This shall be the case, for example, in the event of discussions between the issuers concerned or the appointment of advisors with a view to preparing a public offer.

The information is publicly disclosed in a news release submitted in advance to the AMF for approval and in accordance with Article 221-3.

Source: General Regulation of the Autorité des Marchés Financiers.

Proposals must be fully financed to prevent the creation of a false market. However, other conditions may be included in an offer, in particular, material adverse change clauses. Another typical condition is a minimum acceptance threshold. Conditions deemed “subjective” are not permitted.

The offer document or scheme circular must be sent to target shareholders within 28 days of the announcement. This is also referred to as a “put up or shut up” regime. If two acquirers make a proposal for a target, then the “put up or shut up” deadline no longer applies. Instead, the acquirers must announce their firm intentions by the 53rd day of the first party’s announcement. The panel distinguishes between unsolicited acquisition proposals and formal processes to sell a company. In the latter case, the panel will exempt the companies from both the requirement to name potential acquirers and from the 28-day rule. Nevertheless, once a firm intention has been declared, an offer must be made within 28 days.

Once the offer document or scheme circular has been sent, the timelines differ slightly between schemes of arrangement and takeover offers.

Within 14 days of the publication of the offer document, the target must respond with its views, including the opinions given by its advisers. In recommended offers, this information is normally included in the offer document, so that this deadline in practice only applies to hostile transactions and not to schemes of arrangement, which are friendly by design.

A takeover offer must be open for at least 21 days. The analogous rule for a scheme of arrangement demands that the shareholder meeting to approve the scheme is held no sooner than 21 days after the date of the scheme circular. Revisions to a scheme can be made no later than 14 days prior to the shareholder meeting.

For takeovers, material new information cannot be published more than 39 days after the offer document is sent. The price paid cannot be increased more than 46 days after the document is sent or 14 days before its final closing date.

Once a takeover offer becomes unconditional as to acceptances, it must remain open for at least another 14 days. “Unconditional as to acceptances” refers to a sufficient number of shares having been tendered into the offer to meet the minimum acceptance threshold. This rule allows shareholders who had been holding out to tender their shares anyway.

Extensions are possible, but not beyond the 60th day after the document has been sent. Once the condition as to the acceptance threshold has been fulfilled, all other conditions must be met within 21 days or the offer will lapse by law.

Payment of the merger consideration must be made within 14 days of the closing date for acceptances.

It should be noted that the Takeover Code has no automatic provision for regulatory delays. It is up to the Panel to decide on a case-by-case basis whether to grant an extension when Britain’s competition authorities or the European Commission initiate Phase 2 proceedings.

For a scheme of arrangement, the timetable is mostly determined by the court approval of the scheme. While the shareholder meeting to approve the scheme must be held no sooner than 21 days after the circular has been published, which is similar to the 21-day minimum period during which a takeover offer must be open, there is no maximum date for a scheme. Conditions can also remain unsatisfied indefinitely. However, the circular may define a long-stop date after which the scheme will lapse.

In many other jurisdictions, a similarly well-defined timetable determines how a takeover evolves. Overall, the timing resembles that of the U.K. Takeover Code, but details vary. For example, in the case of Switzerland, the timing of a squeeze-out action after a successful takeover

is well defined. Moreover, another specificity of Swiss takeover timing is that there is a three-trading-day window between electronic publication of information and its publication in traditional print media. In Figure 8.4 (a) this is indicated only for the preannouncement date, but it also applies to the other announcements that are required to be made.

It can be noted from the timetables that courts play a less important role in the countries listed in the merger process than in the United Kingdom. In contrast, securities regulators like Italy's CONSOB (Commissione Nazionale per le Società e la Borsa) or Spain's CNMV (Comisión Nacional del Mercado de Valores) play a more important role or are even the driving force behind the process. In the United Kingdom, it is not the securities regulator but the Takeover Panel that assumes this function.

Day	Event
X, X+3	Pre-Announce Intent of Tender Offer electronically (X), in print newspapers (X+3)
X + up to 6 weeks	Publication or Prospectus
Prospectus publication (P)	Start of 10 trading day (TD) cooling period
P + 10 TD	Start of offer period, min 20 TD, max 40 TD
P + 15 TD	Last day for board report
20 – 40 TD after start of offer period	End of offer period
End of offer + 1TD	Announcement of provisional interim result
End of offer + 4TD	Notification whether Tender offer successful
	Beginning of additional offer period
	Interim results
Interim Results +10TD	Publication of final result
Additional offer + 10TD	End of additional offer period
Additional offer + 4TD	Settlement of Tender Offer
Additional offer + 3m	Start of squeeze out within 3 months of end of additional offer period. Takes 3–5 months

FIGURE 8.4(a) Timetable for Takeovers in Switzerland

Day	Event
X	Board meeting of bidder
	Announcement to market, target and CONSOB
X + 20 days	Offer document filed with CONSOB
X + 34 days	Clearance by CONSOB
	Offer document communicated to target
X + 35 days (P)	Publication of offer document
A - 3 TD	Target director statement filed with CONSOB
P + 1 TD (A)	Start of acceptance period (A)
A + 10 TD	Last day for competing offers
A + 14 TD	Last day for amendments to the offer
A + 15 TD (C)	Earliest possible closing date (C)
C + 1 day	Fulfillment of all conditions
C + 5 days	Payment
C + 3 months	Deadline to start squeeze out

FIGURE 8.4(b) Timetable for Takeovers in Italy

Day	Event
X	Announcement
X + 1 month	Request for CNMV authorization
20 days	CNMV authorizes prospectus within 20 days after it is completed
P	Publication of offer document within 5 days of approval
P + 1 (A)	Acceptance period begins, open 15 – 70 days
A + 10	Publication of director's response
E - 3	Extension of acceptance period no later than 3 days before its scheduled end
E - 5	Competing bids no later than 5 days before end of acceptance period
E - 5	Amendments no later than 5 days before end of acceptance period
A + 15 to 70 (E)	End of acceptance period (E)
E + 3	Publication of results
E + 6	Settlement

FIGURE 8.4(c) Timetable for Takeovers in Spain

Locking out Buyers

An important feature for arbitrageurs is a provision in the Takeover Code and many of its derivatives that prevents buyers who have terminated a bid, or have made an announcement that they are not pursuing an acquisition from returning with a new proposal shortly thereafter. This can limit both the number of potential bidders and stretch the timeline until a previous bidder can return to make a new offer. No comparable provision exists in U.S. takeovers.

Under the Takeover Code, the parties cannot enter into a new transaction after the first one has lapsed. The buyer cannot propose a new transaction within 12 months of the lapse of the original transaction, unless the panel grants a waiver. Typical scenarios where waivers are granted are when an offer lapsed because competition authorities engaged in lengthy reviews, if another buyer makes a proposal, or if the target board supports the buyer's new proposal.

Similarly, when a buyer declines to make a bid after untoward market movements in the securities of a target, French regulations preclude that buyer from making a proposal for six months. The relevant regulation is shown in Exhibit 8.3.

EXHIBIT 8.3 FRENCH REGULATION ON LOCKING OUT POTENTIAL BUYERS

Section 7—Statement of intent in the event of preparations for a takeover bid

Article 223-35

If the persons mentioned in Article 223-32 indicate that they do not intend to file a draft offer, or if they are deemed not to have such an intention pursuant to the final paragraph of Article 223-33, they may not file a draft offer for a period of six months starting from when they made their statement or from the expiry of the deadline mentioned in the final paragraph of Article 223-33, unless they provide evidence of major changes in the environment, situation or shareholding structure of the persons concerned, including the issuer itself.

During the period mentioned in the first paragraph, these persons may not place themselves in a situation in which they are obliged to file a draft offer. If they increase, by 2% or more, the number of equity

securities and securities giving access to capital or voting rights that they hold in the issuer, they must report this immediately and indicate the objectives that they intend to pursue through to the expiry of the period.

The information mentioned in the previous paragraph shall be publicly disclosed according to the conditions and procedures set forth in Article 222-22.

Source: General Regulation of the Autorité des Marchés Financiers.

"No Increase" and "No Extension" Statements

A special feature of takeover code regimes are rules that ban an acquirer from ruling out an increase in the merger consideration unless that really is the final word. In the United Kingdom, Rule 32.2 even requires companies to clarify false press reports that claim incorrectly that management had ruled out an increase in merger consideration.

The Takeover Code's related Rule 31.5 prevents acquirers from ruling out an extension of an offer and then reneging on that promise. The goal of these rules against no increase and no extension statements is to maintain an orderly market and prevent companies from misleading investors about their true intentions.

Exhibit 8.4 shows Guoco Group's disclosure about the analogous rules under Hong Kong's securities laws, Rules 18.3 and 31.1 of The Code on Takeovers and Mergers of Hong Kong, referred to as the Takeovers Code. Hong Leong did not achieve the needed percentage to squeeze out minority holders and hence was unable to come back with a new proposal for 12 months.

Unfortunately, management of acquirers from countries that do not have takeover code regimes sometimes are not familiar with the strict interdictions of behavior that elsewhere might be considered a standard negotiating tactic. For example, when Danish equipment maker FLSmidth attempted to acquire its Australian competitor Ludowici in the year 2012 for A\$7.20 per share, Reuters published an article with the headline "FLSmidth says A\$7.20 per share Ludowici bid final" in which it reported that the CEO of FLSmidth had answered no when asked whether he would consider raising the bid. Eight days later, the newspaper *The Australian* cited the Reuters article, and FLSmidth promptly issues a press release stating that currently it had no intention of raising the bid but reserved the right to do so. Another 10 days later, Weir Group announced a competing A\$7.92 proposal and requested

EXHIBIT 8.4 NO INCREASE STATEMENT IN THE ACQUISITION OF GUOCO GROUP BY HONG LEONG COMPANY (MALAYSIA) BERHAD

(e) "No increase" statement

The Offeror announced that it will not further increase the consideration payable to Guoco Shareholders under the Offer. Guoco Shareholders and/or potential investors in Guoco should be aware that, following the making of that statement, the Offeror is not allowed to increase the consideration payable to Guoco Shareholders under the Offer as a result of Rule 18.3 of the Takeovers Code (save in wholly exceptional circumstances permitted thereunder). Under Rule 31.1 of the Takeovers Code, if the Conditional Offer Alternative does not become unconditional, the Offeror may not normally put forward a similar proposal for at least 12 months from the date on which the Offer lapses.

Source: Composite Offer and Response Document, Guoco Group Limited, Dated April 30, 2013.

that Australia's Takeovers Panel declare the Reuters article a "last and final statement" by FLSmidth, which is the Australian equivalent of a no increase statement. The Takeovers Panel permitted FLSmidth to increase its bid to A\$10 subject to a final determination by the Panel. The Australian Securities and Investments Commission's *Regulatory Guide 25 Takeovers: False and misleading statements* defines what constitutes a *last and final statement*: Unless such a statement is appropriately qualified, a bidder is held to their statement. This also applies to press reports. A bidder should clarify or correct such reports immediately. In the case of FLSmidth, the failure to correct the statement for a week was deemed unacceptable. FLSmidth was ordered to pay compensation to shareholders who had sold their shares in the period between publication of the article and the clarification by FLSmidth. The compensation was capped at A\$2.67 per share and A\$2.9 million in the aggregate, a small fraction of the total transaction value of A\$388 million. Interestingly, the Takeovers Panel did not invalidate the A\$10 proposal. FLSmidth eventually won the bidding war against Weir and acquired Ludowici in July of 2012 for A\$11 per share.

Limitations on increases have been incorporated into the regulations of various non-common law jurisdictions. For example, when Volkswagen

tried to squeeze out the minority shareholders of Swedish truck maker Scania, it announced that it would not increase its SEK200 per share offer. After Scania's committee of independent directors and numerous shareholders rejected VW's proposal as too low, the Swedish Securities Council refused to accommodate VW's desire to increase its offer anyway. It also rejected proposals by VW for an indirect increase by paying an additional dividend to shareholders, as this would violate the spirit of VW's no-increase statement.

KEY U.S. COURT DECISIONS

The United States follows a different philosophy from the detailed prescriptions of the Takeover Code and the various rules derived from it throughout the world. State corporation codes leave considerable freedom to management in the handling of takeover offers. Over the years, court decisions have somewhat restricted and significantly professionalized takeovers, and SEC regulations further narrow the range of possibilities. Overall, however, the merger process retains much more flexibility and variability in the United States than in countries that follow a takeover code regime.

With legislators staying uncharacteristically mute about the details of the merger process, over time judges have come to fill the legislative void. Courts try to stay out of business decisions and give the benefit of the doubt to management. This principle is known as the *business judgment rule*. Judges do not want to second guess every decision taken by boards and expect boards to act in good faith in their decision-making process and to exercise care and loyalty to shareholders. However, the courts do recognize that mergers and acquisitions present a particular challenge to boards. Through a number of key decisions, the merger process has become a highly structured undertaking. Courts in Delaware have taken the lead; those in other states often use similar approaches when faced with merger-related litigation. Even in states where little established case law exists, legal counsel will advise boards to follow Delaware's lead as a best practice. Therefore, understanding Delaware's requirements helps following the process in other states. We will refer to these requirements as six rules.

At the center of all decisions is the question of fairness in two dimensions: fairness of price and fairness in the procedure of the merger. Courts do not like to rule on the fairness of a price—judges are lawyers, after all, not business executives. They defer to the business judgment of the board for that question by default. This gives a significant amount of protection to board members in the day-to-day management of a firm. Instead of second-guessing price, courts will focus on *how* it was determined. The assumption is that if the procedures were deficient and unfair, then it can

be concluded that the price cannot be fair. Some relevant factors are how the merger was negotiated and structured, how information is disclosed to shareholders, and how shareholder votes were conducted. The rest of this section gives an overview of the principles underlying these procedures.

The year 1985 was one of high activity for Delaware's courts, which set the groundwork for modern merger and acquisition (M&A) court decisions. The first decision that year involved the leveraged buyout of rail car leasing firm Trans Union by its chief executive officer, Van Gorkom. The board was confronted with the buyout and was led by Van Gorkom to adopt the merger agreement only minutes after learning that a leveraged buyout was planned. Delaware's supreme court ruled:

[...] we must conclude that the Board of Directors did not reach an informed business judgment on September 20, 1980 in voting to "sell" the Company for \$55 per share pursuant to the Pritzker cash-out merger proposal. Our reasons, in summary, are as follows:

The directors (1) did not adequately inform themselves as to Van Gorkom's role in forcing the "sale" of the Company and in establishing the per share purchase price; (2) were uninformed as to the intrinsic value of the Company; and (3) given these circumstances, at a minimum, were grossly negligent in approving the "sale" of the Company upon two hours consideration, without prior notice, and without the exigency of a crisis or emergency.

488 A.2d 858 (Del. 1985)

The *Van Gorkom* decision is Rule #1: The board must make an informed decision.

Rule #1: The Board Must Make an Informed Decision

Later that year, the Delaware supreme court ruled in a landmark decision in *Unocal v. Mesa Petroleum* that a board owes an "enhanced duty" of care to shareholders in its decisions. Mesa, controlled by T. Boone Pickens, had launched a tender offer for the shares of Unocal, and Unocal's board responded by launching a self-tender offer for its own shares, but excluding Mesa from this offer. The ensuing litigation gave birth to the "enhanced" scrutiny of the *Unocal* standard:

Because of the omnipresent specter that a board may be acting primarily in its own interests, rather than those of the corporation and its shareholders, there is an enhanced duty which calls for judicial examination at the threshold before the protections of the business judgment rule may be conferred.

Before a board may reject a takeover bid, it must analyze

...the nature of the takeover bid and its effect on the corporate enterprise. Examples of such concerns may include: adequacy and timing of the offer, questions of illegality, the impact on 'constituencies' other than shareholders (i.e. creditors, customers, employees, and perhaps even the community generally), the risk of non-consummation, and the quality of the securities being offered in the exchange.

493 A.2d 946 (Del. 1985)

The board's decision to thwart a takeover attempt must pass a two-pronged test:

1. *Reasonableness test.* The board must have a reasonable belief that a threat to the effectiveness of corporate policy exists.
2. *Proportionality test.* The defenses adopted must be reasonable relative to the threat.

Rule #2: The Board Has an Enhanced Duty of Scrutiny

If conflicts of interests are present, such as in management buyouts, then the buyout is considered so tainted that an even higher standard of board scrutiny is required. In the original case underlying this line of thought, the Signal Companies were a 50.5 percent majority shareholder of UOP, Inc. and tried to acquire the remaining 49.5 percent of shares held by public shareholders through a merger. UOP's management made no serious attempt to negotiate a price, allowed two of UOP's directors to prepare a valuation report for Signal using internal UOP data, and failed to disclose a number of relevant facts about the price and the negotiations (or absence thereof) to the public shareholders. The Delaware supreme court ruled that the damages award should be "in the form of monetary damages based upon the entire fairness standard, i.e., fair dealing and fair price" (457 A.2d (Del. 1983)).

Rule #3: "Entire Fairness" Is Required When Directors Are Not Disinterested

The typical procedure to comply with this entire fairness standard is the establishment of a special committee of independent directors, which leads the buyout negotiations. It is obvious that legal and financial advisers for this committee must also be independent.

There is one exception to the entire fairness standard: Delaware law allows for the squeeze-out of minority shareholders when the buyer holds

at least 90 percent of the shares. This is referred to as a short-form merger, because it requires no shareholder approval and can be done in a very short period of time with only an information statement.

An easy way for companies to get to the 90 percent level at which they can avail themselves of close scrutiny is a voluntary tender offer. This has led to a difficult situation for shareholders in tender offers. If a buyer obtains 90 percent of the shares through a tender offer, it can then launch a freeze-out of the remaining shareholders. Neither the tender offer nor the freeze-out will be subject to judicial review if all of the following conditions are true:

- The tender offer was noncoercive.
- A majority of the minority shareholders tender their shares.
- The squeeze occurs promptly after the tender offer and at the same price.
- There are no “retributive” threats to the special committee.

The only remedy for shareholders of a squeeze-out is the exercise of appraisal rights. This topic is covered in Chapter 13.

The requirement that a tender offer be of a noncoercive nature goes beyond minority squeeze-outs and applies to all tender offers. It was first established in *Solomon v. Pathe Communications Corp.*, where the court found that “in the absence of coercion or disclosure violations, the adequacy of price in a voluntary tender offer cannot be an issue” (672 A.2d (Del. 1996)).

Rule #4: A Merger Cannot Be Coercive

The most important rule for arbitrageurs came out of the *Revlon v. MacAndrews & Forbes* litigation. Corporate raider Ron Perelman had tried to buy Revlon through his company, Pantry Pride. Revlon rebutted his repeated offers and instead took a number of defensive measures that favored another buyer, private equity firm Forstmann Little & Co.:

[...] When Pantry Pride increased its offer to \$50 per share, and then to \$53, it became apparent to all that the break-up of the company was inevitable.[...] The duty of the board had thus changed from the preservation of Revlon as a corporate entity to the maximization of the company's value at a sale for the stockholders' benefit. This significantly altered the board's responsibility under the Unocal standards.[...] The directors' role changed from defenders of the corporate bastion to auctioneers charged with getting the best price for stockholders at a sale of the company.

506 A.2d 173 (Del. 1985)

Rule #5: The Board Must Seek to Maximize the Price Paid to Shareholders

Revlon duties, as this rule is referred to, can be classified easily as the most important of all rules discussed here. It is normal to see a number of shareholder lawsuits filed whenever a merger is announced. Most of these lawsuits will allege that the board breached its fiduciary duty to shareholders by failing to seek the highest possible price.

The board is only required to maximize price if it decides to sell the company. Instead of selling, it is legitimate and legal for the board to determine that the company should remain independent and not be sold—for example, if market conditions are adverse and would lead to a sale below intrinsic value, whatever that may be. In that case, the board can adopt anti-takeover provisions, as discussed in the next section.

Revlon is concerned primarily with the procedural dimension of getting the highest price, and the highest price is the one that can be achieved *reasonably*. If a board were faced with two competing bids, the lower of which is unconditional, whereas the higher highly uncertain, it is justified to go for the bird in the hand rather than the bird in the bush and accept the lower bid.

Note that despite the court's use of the term *auctioneer*, it is not necessary for the board to conduct an actual auction. It is possible for a board to sign a merger agreement and then look actively for other buyers at a higher price. This has become fashionable in the current merger boom under the term *go-shop* clause. It allows a company to seek a higher bidder for a limited period of time, usually 30 to 60 days, without having to pay a breakup fee. It is sometimes referred to as a *fiduciary out*. Here is how it works in the case of the First Data buyout by KKR:

During the period beginning on the date of this Agreement and continuing until 12:01 AM (New York City time) on the 51st day following the date of this Agreement (the "No-Shop Period Start Date"), the Company and its Subsidiaries and their respective officers, directors, employees, agents, advisors and other representatives (such Persons, together with the Subsidiaries of the Company, collectively, the "Company Representatives") shall have the right to: (i) initiate, solicit, facilitate and encourage Takeover Proposals, including by way of providing access to non-public information to any other Person or group of Persons pursuant to an Acceptable Confidentiality Agreement; provided that the Company shall promptly make available to Parent and Sub any material non-public information concerning the Company or its Subsidiaries that is made available to any Person given such access

*which was not previously made available to Parent and Sub; and (ii) enter into and maintain or continue discussions or negotiations with respect to Takeover Proposals or otherwise cooperate with or assist or participate in, or facilitate any inquiries, proposals, discussions or negotiations regarding a Takeover Proposal.*¹

Unfortunately, go-shop periods are largely pointless. The bigger and more complex a buyout is, and the shorter the go-shop period, the less likely it is that a potential buyer can be found and conduct sufficient due diligence to make a genuine counterbid. In the case of the \$29 billion buyout of First Data, it took KKR four months from expressing an interest until the signing of a merger agreement. Prior to first contacting First Data, KKR must have conducted a thorough valuation study and industry research, because it gave First Data a narrow price range in which it would be interested. It is hard to see how other buyers can replicate this work in less than two months.

Two types of buyers could have topped KKR's bid: a strategic buyer or another financial buyer. Strategic buyers know their industry and competitors well and will not need to do lengthy industry research. However, they tend to move slowly and will find it difficult to react to such a short timeline. Financial buyers can act very quickly; however, they may not have researched the industry before and may not be able to complete thorough research in addition to due diligence during the short go-shop period. Therefore, go-shop clauses should not count as a market check unless they become significantly longer than at present. Three months are probably the minimum, and for large firms like First Data with different business segments, four to six months are more appropriate. In a case where a go-shop period was litigated, Delaware's chancery court considered a five-month period sufficient (in 2004 Mony Group shareholder litigation). It is unclear whether significantly shorter periods would pass legal muster.

Frequently, *Revlon* duties are broken in a more direct manner. It is not uncommon to see companies selling themselves without conducting a proper market test. This happens primarily with small- and micro-cap issuers, where there is less scrutiny by the press and the shareholder base is less aggressive, unaware of its rights or has simply resigned to being taken advantage of.

The *Revlon* decision has continued to evolve over the last 20 years. First, some states have adopted laws that require management to take the interests of constituencies other than shareholders into account. Second, the courts give the parties some leeway in protecting it against interference from third parties, such as competitors with malicious intents.

In 2003, Genesis Healthcare and NCS had signed a merger agreement that did not allow the board to terminate the merger. Omnicare made a

higher bid for NCS, and NCS's board concluded that the new bid was better. In the ensuing litigation, *Omnicare, Inc. v. NCS HealthCare*, the Delaware supreme court ruled that the merger agreement was void because the agreement was *coercive*.

Hostile takeovers are a special situation where a board decides not to sell a company, or favors one particular buyer over another. The term *hostile* is very appropriate in many instances. One such case was the battle between mining firm Atlas Corporation and financial investor Blasius Industries. Blasius had acquired 9.1 percent of Atlas and wanted Atlas to restructure the firm and sell assets. To that end, Blasius was planning to nominate candidates to its board. However, Atlas preempted that move by expanding the board by two members, whose staggered terms made it much harder for Blasius to obtain control of Atlas. The Delaware chancery court ruled that an action taken by a board without shareholder approval, whose purpose is to disenfranchise shareholders, is not permissible:

1. [...] in creating two new board positions [...] the board was principally motivated to prevent or delay the shareholders from possibly placing a majority of new members on the board. [...] A majority of shareholders, who were not dominated in any respect, could view the matter differently than did the board. If they do, or did, they are entitled to employ the mechanisms provided by the corporation law and the Atlas certificate of corporation to advance that view. They are also entitled, in my opinion, to restrain their agents, the board, from acting for the principal purpose of thwarting that action.

564 A.2d 651 (Del. Ch. 1988)

Rule #6: A Compelling Justification Is Needed If the Board Disenfranchises Shareholders

It is common to include deal protection clauses in merger agreements. The logic is that a deal that has been negotiated in a fair manner should be protected against spoiler bids from rivals who have no real interest in acquiring the firm. Also, the buyer, who expends significant amounts of time and money on due diligence, wants certainty with respect to its investment and do not want to be a stalking horse. For shareholders, the risk is that a merger is agreed at a low price with deal protection clauses that make it impossible to obtain fair value. Not surprisingly, this issue is a point of much litigation. In most cases, the methods described next are used in parallel.

Standard language in merger agreements is a no-shop provision. A good example is that of the buyout of Eddie Bauer Holdings (which later was voted down by shareholders):

Section 6.3. No Solicitation. (a) From and after the date of this Agreement until the earlier of the Effective Time or the termination of this Agreement in accordance with Section 8.1, the Company agrees that (i) subject to Section 6.3(b), the Company and the Company Subsidiaries shall not [...] initiate or solicit [...] or encourage any inquiries or the making or reaffirmation of any proposal or offer that constitutes, or is reasonably expected to lead to, an Alternative Proposal [...]

(b) Notwithstanding anything in this Agreement to the contrary, the Company (directly or through its Representatives) may (i) until receipt of the Company Stockholder Approval, engage in substantive discussions or in negotiations with a Person that makes an unsolicited bona fide written Alternative Proposal [...]²

Eddie Bauer was not allowed to solicit other bidders. However, the second part of this clause, in section (b), allows it to negotiate with a buyer that approaches it. This is often called a *fiduciary out*. If there is no fiduciary out, it is very easy to have a merger agreement voided.

It should be noted that the presence of a fiduciary out does not necessarily mean that shareholders can expect to receive fair value for their shares. First, the signing of the agreement signals to other potential buyers that management favors one particular buyer. Another buyer may have to submit a hostile bid, and not many businesses are willing to do so, if only for reputational reasons. Second, if the buyer is a financial investor, it is unlikely that it will be challenged by another financial buyer. Private equity funds rarely bid against each other. Finally, it has to be remembered that the similar time constraints apply as in the case of go-shop periods.

Breakup fees are another standard feature of merger transactions. They typically vary between 2 and 5 percent of the deal value and tend to be at the high end of that range for smaller transactions. For transactions of \$50 million or more, average termination fees amounted to 3.2 percent in 2004, according to a study by investment bank Houlihan Lokey Howard and Zukin.³

TAKEOVER DEFENSES

In the 1980s, the stock market witnessed a buyout wave, during which corporate raiders such as Nelson Peltz, Samuel Heyman, Carl Icahn, T. Boone Pickens, Sir James Goldsmith, and Henry Kravis acquired many

established and venerable companies. In popular culture, these raiders were immortalized by Gordon Gekko in the movie *Wall Street*. Raiders purchased a company with different lines of business or with assets on its balance sheet that were not valued correctly by its market value. After the purchase, which involved usually a long battle with the company's existing management, the raider sold off its components separately. Raiders were an important factor in the unwinding of the conglomerate boom. One effect of this new trend in business was the emergence of the idea that investors best diversify their portfolios themselves, while companies specialize in their core business. Another effect, and an unintended consequence, was the creation of defense mechanisms by management to prevent outsiders taking control of a firm without the consent of the board.

Such takeover defenses are a double-edged sword. The principal justification is that they provide a company's management team with the ability to make long-term decisions. Others argue that if a company receives an unsolicited proposal, takeover defenses give management time and leverage to negotiate a better deal. Relationships with customers and employees are also cited as justification for strong takeover defenses.⁴ According to this theory, they have the potential of reassuring customers: During the hostile takeover of Peoplesoft by Oracle, customer orders for Peoplesoft products declined because Oracle had announced it would discontinue Peoplesoft's product line after the merger. Strong takeover defenses might have convinced customers to continue buying Peoplesoft's software. Similarly, it is argued that employees prefer to join a company that is less likely to be taken over. Both arguments appear far-fetched. It is doubtful that takeover defenses actually enter any purchasing or employment decisions, and there is no evidence from surveys or other data.

Some academic studies have questioned the benefits of takeover defenses for shareholders. In a 2003 study, Lucian A. Bebchuk and Alma Cohen of Harvard Law School⁵ found that companies with staggered boards (to be described) suffer on average from a 6 percent lower valuation. Another study,⁶ while not addressing the question of company valuation directly, found that analysts do not adjust their earnings forecasts following the adoption of a poison pill (to be described). However, the same study found that poison pills are adopted in response to several downward revisions of earnings, which suggests that they are adopted by boards fearful of losing their jobs.

From any investor's point of view, takeover defenses are a reason for concern. Stocks trade often with a premium if they are takeover candidates, and companies with strong takeover defenses will not be able to get such a premium. Even worse, it will be more difficult for shareholders to organize a change of management in the event the company does poorly. Put simply, takeover defenses entrench management and may even signal to the market that management fears it may become ousted, which means that it is not optimistic for the company's future.

For a merger arbitrageur, takeover defenses generally are not a serious problem. Companies that get acquired will already have waived their defenses in favor of the acquirer. Nevertheless, arbitrageurs can forgo some extra return if the takeover defenses hold other potential acquirers at bay. As discussed in Chapter 2, some of the best opportunities for extra returns come from bidding wars. But in the presence of takeover defenses, another acquirer is not very likely to come forward with a hostile offer. Since inaction does not generate headlines or statistics, it is impossible to quantify how serious this issue is.

As mentioned above, the U.K. Takeover Code restricts takeover defenses severely. Most of the tools and techniques available to U.S. companies to thwart unsolicited and unwelcome acquisition proposals are not available. The Takeover Code explicitly bans the following defenses:

- issue shares or grant options or convertible securities;
- sell assets; and
- enter into contracts other than is the ordinary course of business.

Other, more subtle defenses are also banned. For example, any confidential information provided to one bidder must be made available to all other bidders, too, irrespective of whether they are hostile or friendly. In addition, the Takeover Panel has opined that bringing litigation to frustrate a bid would not be allowed.

Nevertheless, some practices have been allowed, such as promising the payment of a special dividend should a takeover proposal be rejected by shareholders or simply convincing shareholders that a proposal undervalues the company.

Poison Pills

The most popular takeover defense tools are poison pills, euphemistically called shareholder rights plans or share purchase rights plans. Such a plan gives shareholders the right to acquire additional shares at a steep discount to market value when one shareholder acquires more than a certain threshold of a firm. The trick with the structure is that the acquirer itself cannot participate in the rights plan.

As an example, consider excerpts from the shareholder rights plan of OneSource Information Services:

“Acquiring Person” shall mean any Person who or which, together with all Affiliates and Associates of such Person, shall be the Beneficial Owner of 15%, or in the case of a Grandfathered

Stockholder, 35%, or more of the Common Shares of the Company then outstanding [...]

Whereas, the Board of Directors of the Company has authorized and declared a dividend of one preferred share purchase right (a "Right") for each share of Common Stock, par value \$0.01 per share, of the Company (a "Common Share") outstanding on the Close of Business on October 6, 2003 (the "Record Date"), [...] each Right representing the right to purchase one one-thousandth of a Preferred Share (as hereinafter defined), or such different amount and/or kind of securities as shall be hereinafter provided

[...] in the event any Person shall become an Acquiring Person, each holder of a Right shall thereafter have a right to receive, upon exercise thereof at a price equal to the then current Purchase Price multiplied by the number of one one-thousandths of a Preferred Share for which a Right is then exercisable, in accordance with the terms of this Agreement [...]

From and after the occurrence of such an event, any Rights that are or were acquired or beneficially owned by such Acquiring Person (or any Associate or Affiliate of such Acquiring Person) on or after the earlier of (x) the date of such event and (y) the Distribution Date shall be void and any holder of such Rights shall thereafter have no right to exercise such Rights under any provision of this Agreement.⁷

Without going into the details of this plan, it can be seen that whenever someone acquires more than 15 percent of the shares of OneSource, all shareholders receive a preferred share, but the acquirer will not receive any. The result is that the acquirer's stake is diluted and the acquirer would have to purchase the preferred shares from all shareholders. Thus, the purchase of OneSource would become much more expensive.

A remarkable aspect of this particular plan is that one shareholder was exempted. The "Grandfathered Stockholder" referred to in the first paragraph was a private equity fund that was in the process of buying OneSource at the time this poison pill was adopted. Clearly, the motivation of this plan was not to prevent a takeover but to ensure that the private equity fund would be the only possible buyer and that no hostile acquirer could emerge. This private equity fund had bid \$8.40 per share.

The board eventually accepted the bid of a strategic buyer, but only after a shareholder, an investment fund managed by this author, had filed a lawsuit. Shareholders received \$8.85 per share, 5.4 percent more than under the original deal. We will never know how much more other buyers may have been willing to pay if there had been no poison pill.

It should be noted that boards often adopt shareholder rights' plans when they feel threatened. This is particularly problematic if a buyer has already expressed interest or when an activist investor has called for the sale of the firm. Aggressive investors willing to take on a board may be able to get poison pills adopted under such circumstances overturned in the courts.

Poison pills have become somewhat of a rarity in recent years. Proxy advisory firms routinely recommend voting against the adoption or renewal of poison pills. The result is that while in the year 2003 poison pills could be found in 57 percent of all S&P 500 companies, this number had declined to a mere 7 percent by 2013. However, M&A lawyers have told me that many companies keep readily drafted poison pills on the shelf so that they can be adopted quickly by the board should need be. Therefore, not too many inferences can be drawn from the absence of a poison pill at a given company.

Canadian companies adopt poison pills that are much more benign than their U.S. counterparts. Their goal is not to block a hostile bid, but to provide for sufficient time to consider the bid and assure fair treatment of all shareholders. Of course, this same claim will also be made by the proponents of any U.S. poison pill. However, Canadian poison pills do have severe restrictions that make this goal realistic. For example, a Canadian poison pill will be severely restricted in duration, so that it is not possible to shield a company indefinitely from an acquirer. The duration during which Canadian regulators allow poison pills to remain in force has ranged historically from 27 to 156 days. Moreover, Canadian poison pills allow *permitted bids*, which are bids that are open for at least 60 days and require acceptance by more than 50 percent of shareholders. However, the *permitted bids* route is rarely taken by acquirers. Instead, they apply to the relevant provincial securities regulator to "cease trading" in the poison pill.

Under the U.K. Takeover Code, poison pills are banned. Companies can, however, rely on some of the other tactics described below to fend off unwanted suitors.

Staggered Boards

A buyer faced with a target board that opposes a takeover can bring a proposal to shareholders to replace the board with its own candidates. As a defense against such a scenario, many companies have adopted staggered (a.k.a. classified) boards. Under such an arrangement, a board divides its directors into several classes, and only the directors of one class are elected in a given year. For example, if a board has three classes of three directors each, a buyer needs at least two years to gain a majority on the board, and even that is possible only if it wins all slots in one of the two years. Moreover, because there are fewer positions to be elected in a given year, a larger

number of votes is needed to win any board seat. Along with poison pills, staggered boards are the most powerful and frequently used defenses.

Investors who are looking for potential takeover targets should keep an eye on the proposals of activist investors to declassify a board. This is often a prelude to a future merger, but not necessarily so.

Other Defenses

A number of other defenses have been developed over time. Readers interested in details are encouraged to review the extensive specialized literature on the subject. There appears to be no limit to the creativity of corporate lawyers in developing new ones, and it is difficult for most investors to keep track.

Reincorporation in a Less Shareholder-Friendly State California companies sometimes reincorporate in Delaware, which allows for staggered boards whereas California does not. Reincorporation can be the first step in reinforcing takeover defenses. An arbitrageur will be suspicious when a company is for sale but has recently reincorporated.

Multiple Classes of Stock Dow Jones had two classes of stock with different voting rights. Outside shareholders held Class A shares with one vote per share, whereas the heirs of the founder, the Bancroft family, held Class B shares with 10 votes per share. When Rupert Murdoch's News Corp. made a takeover bid for Dow Jones, only after lengthy negotiations did the Bancroft family eventually agree to the transaction. Despite holding less than 25 percent of the company, the family controlled Dow Jones through the bigger voting power.

Cumulative Voting In regular board elections, shareholders vote for each board candidate with one vote. Cumulative voting, however, allows shareholders to give all their votes to a single candidate. Therefore, small shareholders can control the board more easily.

Pac-Man One technique that has not been used in the United States since the 1980s is the Pac-Man takeover defense. Like the vociferous character in the video game, a target company turns the tables by offering to purchase the acquirer instead. This strategy had been relegated to textbooks after it had last been used in 1982 during the takeover by Bendix of Martin Marietta, which ended up as a purchase of Bendix by Martin Marietta. This defense is useful primarily for managers who want to maintain and expand an empire, as was common up to the 1980s. With the widespread

use of stock options and golden handshakes, the possibility of quick personal enrichment upon the successful completion of a merger made this defense very unattractive for a long period of time.

From time to time, press reports emerge suggesting that targets of hostile merger approaches are considering a Pac-Man defense, such as when Kraft Foods was bidding for Cadbury plc in the year 2009, or two years earlier in the failed hostile bid of Rio Tinto by BHP Billiton Ltd. But actual Pac-Man defenses are rare.

A large Pac-Man defense succeeded in the attempted takeover of Volkswagen AG by Porsche SE in the year 2007. Originally, Porsche attempted to acquire Volkswagen through the purchase of call options that would have become deliverable in shares upon their expiration. By using options, Porsche was able to circumvent ownership disclosure rules then in force. However, when the options came due and Porsche was had to acquire the underlying VW shares from its counterparties, Porsche lacked sufficient liquidity to fulfill its commitments. Its position was exacerbated by the financial crisis, which was in its midst at the same time. Volkswagen came to the rescue of Porsche and ended up acquiring Porsche. Another occurrence of the Pac-Man defense was the battle between clothing retailers Men's Wearhouse and Jos. A. Banks. On October 9, 2013, clothing retailer Men's Wearhouse made a hostile takeover attempt for its competitor Joseph A. Banks for \$48 cash per share. Less than two months later, on November 26, Jos. A. Banks reciprocated by offering to acquire Men's Wearhouse for \$55 per share, or an aggregate equity value of \$1.2 billion. The final outcome in 2014 was the originally proposed transaction of Men's Wearhouse acquiring Jos. A. Banks, albeit at a higher price of \$65 per share or a total value of \$1.8 billion.

It remains to be seen whether these two recent occurrences of the tactic are outliers or the beginning of a new wave of Pac-Man defenses.

Buybacks (Leveraged Recapitalizations) Buybacks can be friendly or unfriendly to shareholders. When management seeks to thwart a takeover threat, increasing leverage can serve to deter potential buyers, while the associated buyback can increase the holdings of management-friendly shareholders.

Freeze-out Many U.S. states prevent controlling shareholders from merging with a company for a lengthy period of time, three years in Delaware, unless the board of directors approves the transaction. Note that unlike the other defenses discussed here, a freeze-out is prescribed by state statutes, not company bylaws.

Most states with these provisions give companies the option of opting out of this statute. This is normally stated in a company's bylaws.

For example, in October 2007, American Community Properties Trust filed this change of its bylaws with the SEC. At the time, the controlling family was in the early planning stages of taking over the firm:

*Section 16. Control Share Acquisition Act. Effective October 8, 2007, the Trust elects not to be bound by Subtitle 7 of Title of the Corporations and Associations Article of the Annotated Code of Maryland.*⁸

The provision in Maryland's corporation act goes by the innocuous name of Maryland Control Share Acquisition Act. A shareholder who acquires more than 10 percent loses the voting rights on these shares with respect to a merger or takeover unless the board exempts these shares from the Maryland Control Share Acquisition Act. Of similar state rules, Maryland's is the strictest. When a company opts out of such a provision, it can signal that management may be seeking a sale of the firm.

Another example about the implications of freeze-out provisions was given in Chapter 4 in the discussion about the Pinnacle/Quest Resources merger. At this point, readers should go back to review the letter that Advisory Research sent to Quest's board.

Freeze-outs under State law should not be confused with lockouts after lapsing takeover proposals under the Takeover Code. The important difference is that the freeze-out provision seeks to prevent takeovers altogether.

Asset Acquisitions as Alternatives to Poison Pills Since companies bound by the Takeover Code or its derivatives cannot use poison pills and are prohibited from using asset sales as a defensive tactic, they have to devise clever alternatives. One such creative and unusual defense strategy was employed by pharmaceutical company Elan when Royalty Pharma launched a \$5.7 billion hostile bid in the year 2013. After rejecting the proposal outright, Elan entered into a \$1 billion purchase agreement with drugmaker Theravance Inc. to acquire a 21 percent stake in future royalties from four drugs that Theravance was developing in cooperation with GlaxoSmithKline PLC. Since Elan was based in Ireland, it could not have *sold* assets as a defensive tactic. However, the rules are silent as to asset *acquisitions* for defensive purposes. The new assets will add to the complexity of the transaction and may be sufficient to make the target company unattractive as a target.

To the surprise of Elan's management, shareholders rejected the proposed Theravance asset purchase, and Elan was acquired a few months later by Perrigo for \$8.6 billion after returning \$1 billion to shareholders through a Dutch tender offer.

CREEPING TAKEOVERS AND MANDATORY ACQUISITIONS

A special feature of the Takeover Code that has found its way into many countries' laws is the requirement for an investor to make an offer to acquire a company when they acquire more than 30 percent of the voting interest in a company. For any increases in holding between 30 percent and 50 percent, the same applies (Rule 9.1).

The goal of this rule is to prevent a creeping takeover by a shareholder and provide liquidity to all investors with the protection of an orderly takeover process under the rules of the game. In this spirit, an area that has come under scrutiny recently is the use of derivatives to acquire control of a company. This controversy is mostly limited to continental Europe. Aside from the well-publicized purchase of call options on Volkswagen by Porsche SE, an attempt that ultimately backfired, there are several cases in which acquirers successfully bought a majority of shares in this way.

The United Kingdom's mandatory bid rules have been copied by many other jurisdictions. Austria and Germany, for example, both have a 30 percent threshold, whereas Switzerland has a threshold of 33.33 percent. The price to be paid in such an offer is the higher of a VWAP (volume-weighted average price) and the highest price recorded in the market. The time periods vary between countries. Of the above-mentioned examples, Austria has a six-month lookback on the VWAP and a 12-month lookback for the highest price, whereas Germany considers shorter time periods, three months for the average exchange price and six months for the highest price. Switzerland has a lookback of 60 stock exchange trading days for the VWAP calculation, and 12 months for the highest price, with the additional limitation that the price paid cannot be more than 25 percent below this highest price. Table 8.1 gives an overview of key aspects of mandatory bid rules in various countries.

India implements an interesting variation of this rule: when an acquirer reaches a 25 percent ownership threshold it must make an offer to purchase at least an additional 26 percent of shares. Owners of 25 percent who acquire an additional 5 percent of shares during a year must also make a mandatory offer.

The United States has no provisions for mandatory acquisitions or to prevent creeping acquisitions. Disclosure requirements are the only protection available to investors. The market can observe share purchases of any 10 percent owner through Form 4 filings. In theory, the share price should rise in response to any attempt to buy shares in a creeping takeover. In practice, a point will be reached at which liquidity in the shares declines and any additional purchases by a majority owner lead to a further deterioration in liquidity, which will affect the stock price adversely. Which of the two effects dominates is difficult to tell because such cases are extremely rare and limited to firms with small capitalization. However, while investors

TABLE 8.1 Key Characteristics of Mandatory Takeover Rules

Country	Threshold	Creeping increase	Minimum Price
Austria	30%	Acquisition of an additional 2% over any 12-month period	Higher of a) 6-month VWAP b) Maximum paid by bidder over one year
Australia	Australia does not have mandatory bids. However, a holder of 20% or more cannot acquire more than an additional 3% over any 6-month period.		
Belgium	30%	Acquisition of additional shares beyond 30%	Higher of a) 30-calendar-day VWAP b) Maximum paid by bidder over 1 year
China (People's Republic)	30%		Higher of a) 30-calendar-day VWAP b) Maximum paid by bidder over 6 months
France	30%, and in addition 50% for shares traded on Alternext	If holder of between 30% and 50% acquire an additional 2% over any 12-month period Maximum paid by bidder over 1 year	
Germany	30%		Higher of a) 3-month VWAP b) Maximum paid by bidder over 6 months
Hong Kong	30%	If holder of between 30% and 50% acquire an additional 2% over any 12-month period Maximum paid by bidder over 6 months	
Italy	30%	Additional 5% over one year if own 30%. Maximum paid by bidder over one year. If no purchase: 12-month VWAP	

TABLE 8.1 (Continued)

Country	Threshold	Creeping increase	Minimum Price
Netherlands	30%		Maximum paid by bidder over one year. If no purchase: 12-month VWAP
Spain	30%	(a) Holders between 30% and 50% who acquire 5% within 12 months; (b) When exceeding 50% Maximum paid by bidder over one year. If no purchase highest of: (a) book value; (b) liquidation value; (c) 12-month VWAP; (d) consideration offered previously; (e) other commonly accepted valuation method	
Switzerland	33.33%		Higher of a) VWAP over 60 stock exchange days; b) not more than 25% below highest trading price in 12 months
United Kingdom	30%	Any acquisition between 30% and 50%	Not less than highest price paid by bidder in last 12 months

have limited protections, company management has access to a wide array of anti-takeover measures to frustrate creeping takeovers. Overall, it is clear that shareholders in the United States are less protected than in countries that follow a variant of the Takeover Code, while management is better protected. Enhanced protections may not be necessary as management owed a fiduciary duty to shareholders and domination agreements as they are common in Europe are not possible.

BEST PRICE RULE

As shown in Table 8.1, many jurisdictions impose minimum prices on acquisition proposals. A recurring theme across different countries is the *best price rule*, whereby an acquirer must pay the highest price to every

investor from which it purchases shares during an acquisition. The reason for this principle is greenmailing during the 1980s, when some shareholders negotiated better prices for themselves if they committed to tendering their shares. The regulatory counteraction was to force acquirers to pay the highest price that is paid to any shareholder to all shareholders. This is the best price rule.

To prevent abusive avoidance action of the best price rule, many jurisdictions have extended the time frame during which the best price is calculated beyond the duration of the offer. Frequently, the clock starts ticking one year prior to the announcement of the offer.

The U.S. market takes a special place in the implementation of the best price rule. As with many merger regulations, it is not legislated but has become a *de facto* rule through a series of Delaware court decisions. Nothing prevents a buyer from paying different prices for shares bought from different sellers during an acquisition; however, damages actions are very likely to ensue and stand a good chance of succeeding. The plaintiff bar effectively has created a private enforcement mechanism that acts as a powerful deterrent.

The best price rule is the single most important reason why acquirers do not engage in their own merger arbitrage. Since an acquirer knows with a high degree of certainty whether its acquisition will succeed, it would make sense to purchase shares of the target at a discount were it not for the best price rule.

In rare cases, acquirers do purchase shares during an offer, as did Glencore Xstrata plc when it was trying to acquire Canadian firm Caracal Energy Inc. in the year 2014 through a plan of arrangement for GBP 5.50 per share. Glencore purchased additional shares on the London Stock Exchange for the same price, GBP 5.50, thereby avoiding problems with the best price rule.

It should be noted that while the best price rule has been implemented in most jurisdictions, some important markets lack this provision. For example, when Italy reformed its takeover regime to comply with the European Directive on Takeovers in the year 2004, it did not implement a best price rule, probably because it was not required by the directive. This is not necessarily a deliberate design for Italy's takeover laws but most likely a legislative oversight. As a result, shareholders can acquire sufficient shares to prevent an acquirer from getting to the 95 percent squeeze-out threshold and then sell these shares at a premium to the acquirer. As long as these shares are bought at a premium outside of the takeover then this would be a perfectly legal greenmailing strategy. Anyone tendering shares in the takeover would receive the lower takeover consideration.

MARKET MANIPULATION

Trading activity surrounding merger announcements lends itself to manipulation. But it is not only market participants who may try to influence stock

prices through rumors. The most power to influence the market lies with the management of the target company and the buyer. The buyer's management has an incentive to keep the target company's stock price low in order to make a lowball offer appear attractive. The target company's management generally has the opposite incentive—except when they team up with a private equity buyer, in which case they have an interest in keeping the purchase price low.

The United States has no specific laws against market manipulation during takeovers. General liability against market manipulation under Section 10-b-5 applies, and takeovers are merely one instance of all conceivable cases where markets can be manipulated. Shareholders have information rights under Section 13 of the Securities Exchange Act as well as under Regulation FD, which ensures fair disclosure. These reports are filed on Form 8-K within three business days.

The Takeover Code contains a body of rules that seek to eliminate market manipulation specifically in the case of takeovers. Shareholders are awarded information rights from the target, potential acquirers and even other shareholders.

Target companies are required to disclose a material change in published information.

Acquirers who propose to issue shares to target company shareholders must disclose profit forecasts.

Other shareholders have to disclose their positions in shares of the target if they exceed a certain size. The thresholds for filing holdings reports by investors are reduced during takeovers. In the United Kingdom, investors owning 3 percent of shares must normally disclose their holdings, but during a takeover the threshold is lowered to 1 percent, a level that also applies in Ireland during a takeover.

Even employees can have substantial information rights, in particular in continental European countries with strong trade unions. In Italy, for example, consultation of worker representatives is well defined within the takeover timeline. But the Takeover Code also has employee-friendly provisions, such as a clause that employees must be informed about plans for the future of the workforce. A bidder is bound to any statements made in this context, including that of a “negative statement” if no plans regarding the workforce exist.

Shareholder Votes

As discussed earlier, in contrast to tender offers, shareholders get to vote in mergers and schemes of arrangements. The percentage of shareholders needed to approve a transaction differs between jurisdictions. In the United

States, the approval threshold of 50 percent is the lowest of all countries considered here. The United Kingdom and Canadian level of two-thirds of shareholders, or $66\frac{2}{3}$ percent, is typical for most countries. At the other extreme is Israel, which requires approval of 75 percent of shareholders for court-approved mergers as well as for mergers of companies incorporated before the current Companies Law took effect. For newer companies a lower threshold of 50 percent applies. Exhibit 8.5 shows an excerpt of the merger agreement of the acquisition of Given Imaging Ltd., which was incorporated in Israel, by Covidien. As part of a shareholder agreement approximately 44 percent of the insider votes had irrevocably committed to support the transaction. Therefore, only 55 percent of the noninsider shares had to vote in favor of the merger to reach an overall level of 75 percent.

The Given Imaging merger agreement is also notable in that it contains a provision that no more than 2 percent of shareholders may vote against the merger or the merger will not be approved. However, since 44 percent of the shares had already been locked up that means that almost 3.6 percent of the remaining shares can vote against and the merger will still go through. This is calculated as:

$$P_A = \frac{P_M}{100 - P_L} = \frac{2}{100 - 44} = 0.0357 \quad (8.1)$$

where

P_U is the percentage of unaffiliated shares that can vote against (or abstain).

P_M is the maximum percentage of all shares that can vote against, as stated in the merger agreement.

P_L is the percentage of shares that have been locked up.

EXHIBIT 8.5 VOTING CONDITIONS IN THE MERGER AGREEMENT OF GIVEN IMAGING LTD. WITH COVIDIEN

Section 3.2 Corporate Power; Enforceability

The Company has all requisite corporate power and authority to execute and deliver this Agreement and each Ancillary Agreement to which it is, or is specified to be, a party, to perform its covenants and obligations hereunder and, subject to obtaining the approval

of this Agreement by holders of at least 75% of the Company Shares voted at the Company Shareholder Meeting (not counting any absentee votes), and provided that either (a) such 75% (or more) majority shall include the affirmative vote of holders of a majority of the Company Shares voted at the Company Shareholder Meeting, which Company Shares are held by shareholders who are not controlling shareholders (as such term is defined in the ICL) of the Company and do not have a personal interest (as such term is defined in the ICL) in the approval of this Agreement and the transactions contemplated hereunder (not counting any absentee votes), or (b) the total number of Ordinary Shares held by such shareholders referred to in clause (a) that voted against the approval of this Agreement and the transactions contemplated hereunder, including the Merger at the Company Shareholder Meeting does not exceed two percent (2%) of the aggregate voting rights in the Company (the “Company Shareholder Approval”), to consummate the transactions contemplated hereby and thereby.

Source: Form 6-K filed by Given Imaging on December 9, 2013.

Cross-Border Transactions

U.S. regulators have a long history of extraterritorial application of their rules, and the SEC is no exception with its merger rules. Much to the chagrin of non-U.S. companies, they can find themselves subject to U.S. merger regulation under certain circumstances. For example, when a non-U.S. company wants to acquire another non-U.S. firm whose shares are traded as American Depositary Receipts (ADR) in the United States, the acquirer may suddenly find itself subject to U.S. laws.

Shares of many foreign companies can be purchased in the United States over the counter. Regulators are concerned, quite rightly so, that when such a company is acquired, the absence of comparable disclosure requirements that can leave U.S. shareholders less well informed than if their investment had been acquired by a U.S. buyer. A number of exemptions make life easier for non-U.S. companies:

Tier I exemptions apply when U.S. holders own fewer than 10 percent of the shares of the target. In that case, a tender offer is exempt from the disclosure requirements of Schedule TO. U.S. holders must be

treated as least as favorably as any other investors, for the consideration offered as well as for the other terms of the offer. In addition, in a stock-for-stock merger, the securities issued by the acquirer do not have to be registered if fewer than 10 percent of the target's shares are held by U.S. investors. The 10 percent threshold also allows acquirers to purchase shares outside of a tender offer.

Tier II exemptions are available to companies fewer than 40 percent of whose shares are owned by U.S. investors. Companies are subject to the same filing requirements as U.S. firms but get some relief in the form of timing of the payment of shares and of extensions of a tender offer, or the payment of interest when allowed under foreign law. The goal of tier II is to prevent conflicts between U.S. regulations and certain foreign merger rules.

Tier III exemptions are available if more than 40 percent of the shares of a foreign company are held by U.S. investors. In this case, the company is subject to the same requirements as U.S. firms.

In all cases, the bidder must provide U.S. holders with information in English that is comparable to that received by other holders. These documents are also furnished to the SEC. However, they are not considered "filed" with the SEC. This is an important distinction because only "filed" documents are subject to the antifraud provisions of the securities laws. Therefore, these regulations allow foreign corporations to offer securities to U.S. investors without the customary regulatory protections.

It should also be noted that for going-private transactions, the disclosure requirements of 13E-3 (see Chapter 11) do not apply.

Many companies still find compliance with the exemptions too burdensome and decide to structure their acquisitions so that they exclude U.S. shareholders. The result of this avoidance strategy is extremely disadvantageous for U.S. investors: They can find themselves holding extremely illiquid shares. U.S.-based arbitrageurs must understand well whether they will be excluded. It may make sense for U.S.-based arbitrageurs to establish a non-U.S. vehicle to engage in merger arbitrage of foreign companies.

Exit Rights

A particular aspect of Italian merger law is exit rights for shareholders under certain circumstances, such as when the headquarters of a company change from Italy to a foreign country as the result of a merger. This was, for example, the case when Fiat S.p.A. merged with Chrysler into a Dutch holding company Fiat Chrysler Automobiles N.V. in 2014. Shareholders were

entitled to receive a cash exit payment of €7.727 per Fiat share for surrendering their shares. This payment was based on the six-month average price of the shares after the shareholder meeting had been called. As the stock market was declining toward the end of the period, the ending price of Fiat was below the cash exit payment. This opened the opportunity for an arbitrage, because shareholders were able to purchase the shares in the open market in the low to mid €7.30s, generating a profit of around €0.40, or close to 10 percent annualized to the anticipated closing date.

Exit rights are also triggered when an Italian company is acquired by a non-Italian firm in a stock-for-stock transaction. For example, when U.S. gaming machine maker International Game Technology acquired its Italian competitor GTECH SpA for \$6.4 billion in 2015, 11.4 percent of GTECH shareholders exercised their exit rights for a cash payment of €19.174 per share, which was a premium of about 1 euro over the then trading price of GTECH.

However, one risk remains with exit rights: If the amount of exit rights perfected exceeds a certain threshold, mergers can be called off. In the case of Fiat, this amount was €500 million in aggregate exit rights. The threshold was not reached and the merger closed. Of course, investors must also take care to request exit rights prior to the deadline and not vote in favor of the merger.

Management Incentives

Management of a company operates as an agent for the shareholders, the principals of the firm. Conflicts between principals and agents have always existed. Most investors ignore them as a cost of business until a financial crisis erupts, when abuses inevitably come to the forefront. It is only then that investors become aware of the problem.

For arbitrageurs, dealing with corporate management's conflicts of interest is part of the daily investing life. Arbitrageurs usually get involved after a transaction has been announced. It is important to understand the rationale behind a transaction to see whether a higher bid might emerge and whether management has an incentive to support such a higher bid. In management buyouts (MBOs) in particular, it is highly unlikely that a higher bidder will emerge.

In the United States, information about management's interest in a merger is supposed to be disclosed in detail. Proxy statements show the different levels of interest that management has in the transaction. The Securities and Exchange Commission (SEC) adopted special regulations under Rule 13E-3 to deal with acquisitions in which management is on both sides of the transaction. Schedule 13E-3 is filed at the same time as Schedule TO or the statements under Regulation 14A, but at least 30 days before any securities are purchased by the acquirer. Much of the material required to be disclosed in Schedule 13E-3 duplicates that of other filings in going-private transactions. As a result, many filings contain little more information than the headings followed by sentences incorporating the other material by reference. Exhibit 9.1 shows an excerpt of such a filing in the going-private transaction of rue21, Inc. There is little substantive information in the filing. The exhibit only shows the information of items 1 through 4. The remainder of the 10-page filing looks similar to the items shown here. An arbitrageur reviewing this filing learns nothing new. The only interesting element of these filings are that they are sometimes used to file board presentations from the company's advisers. Arbitrageurs can glean valuable information from such presentations.

rue21, Inc. was acquired by private equity firm Apax Partners. Even though there is rarely useful information in a Schedule 13E-3 filing itself, the appendices to the filing can be very useful. In the case of rue21's 13E-3, eight

**EXHIBIT 9.1 EXCERPT OF SCHEDULE 13-E3/A FILED
BY RUE21, INC.**

Item 1. Summary Term Sheet.

The information set forth under the captions “Summary Term Sheet” and “Questions and Answers About the Special Meeting and the Merger” in the Proxy Statement is incorporated herein by reference.

Item 2. Subject Company Information.

- (a) Name and Address. The name of the subject company is rue21, Inc., a Delaware corporation. rue21’s executive offices are located at 800 Commonwealth Drive, Warrendale, PA 15086. Its telephone number is (724) 776-9780.
- (b) Securities. The class of securities to which this Schedule 13E-3 relates is the common stock, par value \$0.001 per share, of rue21, of which 23,499,510 shares were issued and outstanding as of June 19, 2013.
- (c) Trading Market and Price. The information set forth under the caption “Other Important Information Regarding rue21—Market Price of Common Stock and Dividends” in the Proxy Statement is incorporated herein by reference.
- (d) Dividends. The information set forth under the caption “Other Important Information Regarding rue21—Market Price of Common Stock and Dividends” in the Proxy Statement is incorporated herein by reference.
- (e) Prior Public Offerings. The information set forth under the caption “Other Important Information Regarding rue21—Prior Public Offerings” in the Proxy Statement is incorporated herein by reference.
- (f) Prior Stock Purchases. The information set forth under the caption “Other Important Information Regarding rue21—Certain Purchases and Sales of Shares” in the Proxy Statement is incorporated herein by reference.

Item 3. Identity and Background of Filing Person.

- (a)–(c) Name and Address; Business and Background of Entities; Business and Background of Natural

Persons. rue21 is the subject company. The information set forth under the captions “Parties to the Merger,” “Other Important Information Regarding rue21—Directors and Officers of the Company” and “Other Important Information Regarding the Parent Group, the Apax Investors and the SKM Funds” in the Proxy Statement is incorporated herein by reference.

The SKM Funds have not been identified as filing persons in the Schedule 13e-3. The Apax Investors, Parent Group and the Company have been advised by the SKM funds that, although the SKM Funds may be deemed to be affiliates of the Company and/or Apax and the Apax Investors, (i) the SKM Funds do not believe that they are engaged in a going private transaction for purposes of Rule 13e-3 under the Exchange Act, (ii) the SKM Funds believe that they are passive sellers in the Merger and related transactions and (iii) the SKM Funds have been represented by separate counsel.

Item 4. Terms of the Transaction.

- (a)(1) Tender Offers. Not applicable.
- (b)(2) Mergers or Similar Transactions.
 - (i) The information set forth under the captions “Summary Term Sheet—Special Factors—Certain Effects of the Merger; Certain Effects on the Company if the Merger is not Completed,” “Special Factors—Certain Effects of the Merger” and “The Merger Agreement—The Merger; Merger Consideration” in the Proxy Statement is incorporated herein by reference.
 - (ii) The information set forth under the captions “Summary Term Sheet—Special Factors—Certain Effects of the Merger; Certain Effects on the Company if the Merger is not Completed,” “Summary Term Sheet—The Merger Agreement—Treatment of rue21 Stock Options and Other Equity-Based Awards,” “Questions and Answers About the Special Meeting and the Merger” and “The Merger Agreement—The

- Merger; Merger Consideration” in the Proxy Statement is incorporated herein by reference.
- (iii) The information set forth under the captions “Special Factors—Background of the Merger,” “Special Factors—Recommendation of the Special Committee and the Board of Directors; Fairness of the Merger,” “Special Factors—Position of the Parent Group and the Apax Investors as to the Fairness of the Merger,” “Special Factors—Opinion of Financial Advisor to the Special Committee,” “Special Factors—Purpose and Reasons of the Parent Group and the Apax Investors for the Merger,” “Special Factors—Plans for the Company After the Merger,” “Special Factors—Certain Effects of the Merger,” “Special Factors—Considerations Relating to the Merger” and “Special Factors—Certain Effects on the Company if the Merger is not Completed” in the Proxy Statement is incorporated herein by reference.
 - (iv) The information set forth under the captions “Summary Term Sheet—The Special Meeting—Vote Required,” “The Special Meeting—Vote Required” and “Questions and Answers About the Special Meeting and the Merger” in the Proxy Statement is incorporated herein by reference.
 - (v) The information set forth under the captions “Summary Term Sheet—Special Factors—Certain Effects of the Merger; Certain Effects on the Company if the Merger is not Completed,” “Special Factors—Certain Effects of the Merger,” “Special Factors—Interests of Executive Officers and Directors of the Company in the Merger” and “Questions and Answers About the Special Meeting and the Merger” in the Proxy Statement is incorporated herein by reference.
 - (vi) The information set forth under the caption “Special Factors—Accounting Treatment” is incorporated herein by reference.

- (vii) The information set forth under the captions “Summary Term Sheet—Special Factors—Material United States Federal Income Tax Consequences of the Merger,” “Special Factors—Material United States Federal Income Tax Consequences of the Merger” and “Questions and Answers About the Special Meeting and the Merger” in the Proxy Statement is incorporated herein by reference.
- (c) Different Terms. The information set forth under the captions “Special Factors—Certain Effects of the Merger,” “Special Factors—Interests of Executive Officers and Directors of the Company in the Merger,” “The Merger Agreement—The Merger; Merger Consideration,” “The Merger Agreement—Treatment of rue21 Stock Options and Other Equity-Based Awards” and “The Support Agreement” in the Proxy Statement is incorporated herein by reference.
- (d) Appraisal Rights. The information set forth under the captions “Summary Term Sheet—The Special Meeting—Appraisal Rights,” “Appraisal Rights” and “Questions and Answers About the Special Meeting and the Merger” in the Proxy Statement is incorporated herein by reference.
- (e) Provisions for Unaffiliated Security Holders. The information set forth under the captions “Special Factors—Provisions for Unaffiliated Security Holders” in the Proxy Statement is incorporated herein by reference.
- (f) Eligibility for Listing or Trading. Not applicable.

Source: Schedule 13E-3/A filed by rue21, Inc. on June 21, 2013

presentations were filed as appendices that had been given by investment bank Perella Weinberg Partners to the special committee of the board of directors.

The only benefit of Rule 13e-3 is that additional disclosures are required from buyers about their opinion on the fairness of the transaction. They are required to state whether they believe that the transaction is fair

to shareholders. The information is already included in the proxy or tender offer statements and is incorporated by reference into Schedule 13E-3. Needless to say, buyers always believe that the transaction is fair. The disclosures in this section are mostly rephrased repetitions of the determination of fairness made in boilerplate language by the board of directors.

MANAGEMENT COMPENSATION

In a corporation organized by Taylorist principles, the value of management is key to the success of the firm. Rank and file staff has to be just good enough to complete well-defined tasks that are assigned by management.¹ Retention of key executives is of prime importance in such organizations, and today's levels of compensation reflect management's indispensability.

Modern management compensation consists of a number of different elements:

- Salary.
- Short-term incentives, such as an annual bonus. These incentives are often tied to specific goals, such as financial parameters, improvements in product quality, or market share.
- Long-term incentives, such as restricted stock, options, or stock appreciation rights. These incentives typically are subject to a vesting schedule.
- Benefits, such as pensions, health and life insurance, financial planning assistance, personal use of corporate jets or company cars.
- Indemnification. This benefit is often overlooked. It is highly contingent on extremely rare scenarios where executives are held liable personally for wrongdoing. However, the value of indemnification is very large when such a scenario occurs.

For the executives with the highest overall compensation, variable components constitute the bulk of their income. For executives with lower total compensation, salary makes the largest contribution to their income. An entire cottage industry of compensation consultants has sprung up over the years that advises the board of directors of public companies on the best level and combination of the different types of compensation. What happens if a company is acquired by another is no more than an afterthought in these discussions. However, the payout to top management can be considerable when a firm is acquired.

So-called change of control provisions in the employment agreements of management provide for large immediate payouts when an acquisition is completed. Typical payments under such provisions are listed next.

- Salary and annual bonus are often paid out as a lump sum at a multiple of a single year's total.

- Stock options and stock appreciation rights are cashed out at their intrinsic value. Restricted stock loses its restrictions and is also cashed out or converted into unrestricted stock of the acquirer.
- Benefits usually terminate but sometimes continue to be available. Health insurance in particular is often available for an extended period of time after a merger.
- Indemnification continues to be provided by buyer for executives' actions at the former target.

The large lump-sum payments for salary, bonus, and stock options are referred to as golden parachutes. They were introduced originally to overcome resistance of top managers to mergers that would enhance shareholder value but eliminate their management roles. Rather than work to make their own jobs with their comfortable salaries redundant, managers had an incentive to block mergers so that they could hold on to their highly remunerated positions. An additional incentive for top managers is the difficulty of finding comparable positions elsewhere, especially if their industry is consolidating. Although many top managers like to point out in salary negotiations that their skills are easily transferable to other firms, the reality is that it is difficult for outsiders to obtain highly compensated management positions, as these roles are often filled internally. Management stars in some top companies may find new employment easily, but run-of-the-mill executives from small- or mid-cap firms can have a harder time. Studies illustrate that CEOs of companies that are acquired experience a high likelihood of being laid off at the time of acquisition, and within several years for the few who remain employed initially.²

Exhibit 9.2 shows the disclosure of change of control payments for Omnicom. As is typical for firms that have seen a strong appreciation of their stock and are heavy users of options, the bulk of the value of a change of control comes from the immediate vesting of stock options upon the closing.

EXHIBIT 9.2 CHANGE OF CONTROL PROVISIONS OF OMNICOM

Potential Payments Upon Termination of Employment or Change in Control

Each named executive officer participates in our Incentive Bonus Plan; Messrs. Wren, Weisenburger and Angelastro participate in our SERCR Plan; and Mr. Hewitt has entered into an Executive Salary Continuation Plan Agreement with Omnicom. As further described below, participants in our Incentive Bonus Plan are not entitled to payment due to termination of employment or change in control,

participants in the SERCR Plan are entitled to payments upon termination of employment under certain circumstances and the Executive Salary Continuation Plan Agreement provides for payment upon termination of employment under certain circumstances. Our named executive officers also hold stock options and/or stock awards, which are subject to accelerated vesting upon termination of employment under certain circumstances or upon a change in control. [...] Except for these arrangements, none of the named executive officers have entered into any plans, arrangements or agreements with Omnicom providing for payments upon termination of employment or change in control of Omnicom, other than payments generally available to all salaried employees that do not discriminate in scope, terms or operation in favor of the executive officers of Omnicom.

The SERCR Plan

Omnicom adopted the SERCR Plan in 2006, and the Compensation Committee selected Messrs. Wren, Weisenburger and Angelastro to participate and enter into Award Agreements with Omnicom. The SERCR Plan is unique in its structure and objectives. It is a multi-faceted device that provides security to Omnicom through the restrictive covenants described below while delivering a valuable benefit to executives in the form of post-termination compensation. The SERCR Plan mitigates the need to provide severance benefits to participating executives as the program provides a guaranteed stream of income following termination provided the executive fully complies with his obligations.

Restrictive Covenants and Consulting Obligation

In consideration for annual benefits from Omnicom, participants in the SERCR Plan are subject to restrictions on competition, solicitation, disparagement, and other willful actions materially harming Omnicom, from the date of termination of employment through the end of the calendar year in which they receive their last annual benefits payment. In addition, prior to age 55, upon 30 days' written notice from Omnicom, the named executive officers agree to serve as advisers or consultants to Omnicom during the retention payment period, subject to certain limitations.[...]

Acceleration of Equity Awards

Messrs. Wren, Weisenburger, Angelastro, and O'Brien hold unvested stock options and performance restricted stock units pursuant to our 2007 Plan. Messrs. Angelastro and O'Brien hold restricted stock units pursuant to our 2007 Plan and restricted stock pursuant to our prior equity incentive plan, The Omnicom Group Inc. Equity Incentive Plan (the "Equity Incentive Plan"). Mr. Hewitt holds performance restricted stock units pursuant to our 2007 Plan and restricted stock pursuant to both our 2007 Plan and Equity Incentive Plan. As specified below, such named executive officers are entitled to accelerated vesting (a) on a pro rata basis upon termination of employment due to disability (b) upon death, (c) upon a change in control of Omnicom and (d) subject to certain conditions, upon retirement.

Stock Options

Unvested options granted pursuant to the 2007 Plan vest in full and are exercisable through the end of the option term if (a) the named executive officer terminates due to death or (b) a change in control of Omnicom occurs. [...]

Restricted Stock, Restricted Stock Units and Performance Restricted Stock Units

Restricted stock, restricted stock units and performance restricted stock units, as applicable, granted in 2007 pursuant to the Equity Incentive Plan or thereafter under the 2007 Plan fully vest in the event of a change in control of Omnicom [...]

Potential Payments Upon Termination of Employment or Change in Control

The following table provides the potential payments that each named executive officer may receive upon termination of employment or change in control of Omnicom, assuming that (a) such termination or change in control of Omnicom occurred on December 31, 2011, and (b) the price per share of Omnicom common stock equals \$44.58, the closing price at 2011 fiscal year end.

Name of Executive	Death	Disability	For Cause Termination	Termination without Cause	Retirement	Voluntary Termination	Change in Control
John Wren							
• SERCR Plan ⁽¹⁾	\$1,500,000	\$1,500,000	\$0	\$1,500,000	\$1,500,000	\$1,500,000	N/A
• Incentive Bonus Plan ⁽²⁾	\$12,000,000	\$12,000,000	\$0	\$12,000,000	\$12,000,000	12,000,000	\$12,000,000
• Equity Awards ⁽³⁾	\$6,972,677	\$5,614,494	\$0	\$0	\$4,236,000	\$0	\$6,972,677
Randall Weisenburger							
• SERCR Plan ⁽⁴⁾	\$1,500,000	\$1,500,000	\$0	\$1,500,000	\$1,500,000	\$1,500,000	N/A
• Incentive Bonus Plan ⁽²⁾	\$8,640,000	\$8,640,000	\$0	\$8,640,000	\$8,640,000	\$8,640,000	\$8,640,000
• Equity Awards ⁽³⁾	\$4,307,324	\$3,329,680	\$0	\$0	\$0	\$0	\$4,307,324
Philip Angelastro							
• SERCR Plan ⁽⁵⁾	\$472,750	\$472,750	\$0	\$472,750	\$472,750	\$472,750	N/A
• Incentive Bonus Plan ⁽²⁾	\$1,400,000	\$1,400,000	\$0	\$1,400,000	\$1,400,000	\$1,400,000	\$1,400,000
• Equity Awards ⁽³⁾	\$5,982,867	\$4,329,564	\$0	\$0	\$0	\$0	\$5,982,867
Dennis Hewitt							
• Executive Salary							
Continuation Agreement							
• Incentive Bonus Plan ⁽²⁾	\$88,875	118,500	\$0	\$118,500	\$118,500	\$118,500	N/A
• Equity Awards ⁽³⁾	\$625,000	\$625,000	\$0	\$625,000	\$625,000	\$625,000	\$625,000
	\$851,166	\$479,235	\$0	\$0	\$0	\$0	\$851,166
Michael O'Brien							
• Incentive Bonus Plan ⁽²⁾	\$850,000	\$850,000	\$0	\$850,000	\$850,000	\$850,000	\$850,000
• Equity Awards ⁽³⁾	\$1,356,303	\$1,074,720	\$0	\$0	\$0	\$0	\$1,356,303

- (1) Except in the event of a termination for Cause, Mr. Wren or his beneficiary, as the case may be, would be entitled to receive fifteen annual payments in this amount, the first of which would be payable in 2012. Mr. Wren would not be entitled to any payments in the event of termination for Cause. The amount reported is the payment cap set forth in the SERCR Plan as in effect on December 31, 2011, such amount being subject to an annual cost-of-living adjustment. All payment obligations are conditioned upon compliance with the restrictive covenants and consulting obligation described above.
- (2) As discussed above, upon a termination of employment for any reason prior to the end of a performance period or prior to the bonus payment date for such performance period, the participant is not entitled to any award. The Compensation Committee, however, has discretion to determine whether awards should be made pursuant to the Incentive Bonus Plan and the amounts of such awards. A termination of employment on December 31, 2011 would fall prior to the bonus payment date for the 2011 performance period. The amounts reported in the table assume that the Compensation Committee in its discretion authorized a payment equal to the target bonus amounts, except in the event of a for cause termination, in which case it is assumed that the Compensation Committee would not grant an award.
- (3) The value of any stock options was determined by taking the aggregate fair market value, as of 2011 fiscal year end, of the common stock underlying stock options subject to accelerated vesting, and subtracting the aggregate exercise price for such stock options. The value of restricted stock, restricted stock units and performance restricted stock units was determined by taking the aggregate fair market value of the shares of restricted stock (or the shares underlying restricted stock units and performance restricted stock units) subject to accelerated vesting as of 2011 fiscal year end. The value of performance restricted stock units assumes achievement of the highest performance target and therefore the actual value could be lower than the amount disclosed. Also, the value of restricted stock has not been adjusted to reflect any par value paid by the executive for such stock on the date of grant.
- (4) Except in the event of termination due to death or disability or a termination for Cause, Mr. Weisenburger would be entitled to receive fifteen annual payments in this amount, the first of which would be payable in 2013 upon Mr. Weisenburger turning fifty-five. In the event of termination due to death or disability, Mr. Weisenburger or his beneficiary, as the case may be, would be entitled to receive fifteen annual payments in this amount, the first of which would be payable in 2012. Mr. Weisenburger would not be entitled to any payments in the event of termination for Cause. The amount reported is the payment cap set forth in the SERCR Plan as in effect on December 31, 2011, such amount being subject to an annual cost-of-living adjustment. All payment obligations are conditioned upon compliance with the restrictive covenants and consulting obligation described above.
- (5) Except in the event of termination due to death or disability or a termination for Cause, Mr. Angelastro would be entitled to receive fifteen annual payments in this amount, the first of which would be payable in 2019 upon Mr. Angelastro turning fifty-five. In the event of termination due to death or disability, Mr. Angelastro or his beneficiary, as the case may be, would be entitled to receive fifteen annual payments in this amount, the first of which would be payable in 2012. Mr. Angelastro would not be entitled to any payments in the event of termination for Cause. All payment obligations are conditioned upon compliance with the restrictive covenants and consulting obligation described above.
- (6) This reflects 75% of Mr. Hewitt's \$118,500 annual payment, payable to his designated beneficiary. Ten annual payments in this amount would be paid to such beneficiary, with the first payment being made in 2012.
- (7) This reflects 30% of the highest annual rate of salary paid to Mr. Hewitt in the five years preceding December 31, 2011. Ten annual payments would be made in this amount, with the first payment being made in 2013. All payment obligations are conditioned upon compliance with the consulting obligation and agreement not to compete described above. *Source:* Form Def 14A by ATMI Inc. filed on April 11, 2013.

In addition to change of control payments, management can receive special rewards for effecting a merger, such as some executives of ATMI Inc. did upon the acquisition by Entegris Inc. (Exhibit 9.3).

EXHIBIT 9.3 DISCLOSURE ABOUT THE TRANSACTION BONUS AGREEMENT OF ATMI INC.

Transaction Bonus Agreement

On January 13, 2014, ATMI entered into a transaction bonus agreement (referred to in this proxy statement as the Transaction Bonus Agreement) with Christian Kramer, as well as with certain other (non-executive officer) employees of the Company.

The Transaction Bonus Agreement generally provides that, upon a “change of control” (as defined in the Transaction Bonus Agreement), which includes the merger, within one (1) year following the effective date of the Transaction Bonus Agreement, subject to ATMI’s shareholders receiving “transaction value” (as defined in the Transaction Bonus Agreement) of at least \$900,000,000, Mr. Kramer would be entitled to a transaction bonus equal to the sum of (i) the total transaction value, multiplied by the “base bonus ratio” (as defined in the Transaction Bonus Agreement) of 0.20%, multiplied by 17.5%, and (ii) the excess amount of transaction value above \$1,000,000,000, multiplied by the “additional bonus ratio” (as defined in the Transaction Bonus Agreement), which ranges from 0% to 0.20% based on the amount of transaction value, multiplied by 17.5%. The transaction bonus will be paid in a cash lump sum within five days following the change of control.

In order to be eligible for a transaction bonus, Mr. Kramer generally must remain employed through the change of control. However, if Mr. Kramer’s employment is terminated without “cause” (as defined in the Transaction Bonus Agreement) following the signing of a definitive agreement in respect of a change of control, he will remain eligible for the transaction bonus if the change of control is consummated within one (1) year following the effective date of the Transaction Bonus Agreement, subject to Mr. Kramer’s continued compliance with restrictive covenants in any equity award agreement or other agreement between Mr. Kramer and ATMI.

Pursuant to the Transaction Bonus Agreement, if an amount payable to Mr. Kramer constitutes a “parachute payment” within the meaning of Section 280G of the Code, such payment will be reduced

to the extent necessary so that no amount payable to the executive constitutes a “parachute payment.” However, Mr. Kramer’s payments will not be subject to reduction if the net after-tax payment to which he would otherwise be entitled without such reduction would be greater than the net after-tax payment to him resulting from the receipt of such payments with such reduction. All determinations under the provision will be made by a nationally recognized accounting firm designated by ATMI.

See “Proposal 3: Advisory Vote Regarding Golden Parachute Compensation” for quantification of the transaction bonus payment to which Mr. Kramer is entitled under the Transaction Bonus Agreement.

Source: Form DEF14A filed by ATMI on March 12, 2014.

Payments to executives are subject to excise taxes unless they have been approved by shareholders. Section 280G denies a corporation a deduction for a golden parachute payment to the extent that it exceeds three times an executive’s annual salary unless shareholders have approved the payment.³ A parallel regulation, section 4999, imposes a 20 percent excise tax on the recipient of the excess payment of the golden parachute.

These rules were first introduced in the 1980s after a public outcry over large payments to executives whose companies are acquired. The IRS regulations were well meant but have been diluted quite significantly. When they do apply, they have an adverse effect on shareholders. Companies are allowed to reimburse executives for the 20 percent excise tax. The result is that the cost of the golden parachute has increased for the company, and a sophisticated buyer will take the cost of the nondeductibility and reimbursement of the excise tax into account and reduce the purchase price accordingly. The net effect is a transfer of shareholder wealth to Uncle Sam. In many mergers, golden parachutes are immaterial, but for smaller companies with highly compensated executives, golden parachutes can become significant.

The rationale behind golden parachutes was to provide managers with strong financial security if they give up their jobs to support mergers that are in the interest of shareholders. The reality of change of control provisions is more differentiated than the theory suggests. Under the Dodd-Frank regulations, golden parachute payments need to be approved by shareholders. Originally Dodd-Frank was supposed to regulate banks and financial products rather than tax treatment of mergers, but experience shows that the reach of new laws quickly goes beyond the original intent. Exhibit 9.4 shows

disclosures in such an advisory vote. As it is an advisory vote it is non-binding and is of no practical consequence. Nevertheless, some larger companies may find compelled to follow the outcome of a shareholder advisory vote.

EXHIBIT 9.4 ADVISORY VOTE ON GOLDEN PARACHUTE PAYMENTS OF ATMI INC.

Equity Awards

Immediately prior to the consummation of the merger, (i) each option to acquire shares of ATMI common stock that is then outstanding and that has an exercise price less than the \$34.00 per share merger consideration, whether or not then vested or exercisable, will be cancelled and terminated, and each holder of such an option will have the right to receive an amount of cash equal to (a) the number of shares of ATMI common stock subject to each such option, multiplied by (b) the excess of \$34.00 over the exercise price per share of each such option, less any applicable withholding taxes; (ii) each Company Restricted Stock Award that is then outstanding will be cancelled and terminated, and each holder of a Company Restricted Stock Award will have the right to receive an amount in cash equal to (a) the number of shares of ATMI common stock subject to such Company Restricted Stock Award, multiplied by (b) \$34.00, less any applicable withholding taxes; and (iii) each Company Restricted Stock Unit Award that is then outstanding will be cancelled and terminated, and each holder of a Company Restricted Stock Unit Award will have the right to receive an amount in cash equal to (a) the number of shares of ATMI common stock subject to such Company Restricted Stock Unit Award (determined based on the actual performance achieved as if the closing date of the merger represented the end date of the performance period), multiplied by (b) \$34.00, less any applicable withholding taxes.

Severance Payments and Benefits

ATMI and Messrs. Neugold, Carlson and Sharkey are parties to employment agreements, and Messrs. Kramer and Dubois participate in the ATMI, Inc. Executive Severance Pay Plan, which provide for certain severance payments and benefits in connection with a

qualifying termination following the proposed merger. As a condition of an executive's receipt of the severance payments and benefits, the executive is required to execute, and not revoke, a release of claims. In addition, the employment agreements provide that the executives will be subject to certain non-competition and non-solicitation restrictions (for two (2) years in the case of Mr. Neugold, and one (1) year for Messrs. Sharkey and Carlson). In order to participate in the Executive Severance Pay Plan, Messrs. Kramer and Dubois will enter into restrictive covenants agreements with ATMI that provide that, for a period of twelve (12) months following termination of the executive's employment with ATMI, the executive will be subject to certain covenants regarding non-competition, non-solicitation of employees and non-interference with ATMI's business.

Transaction Bonus

ATMI and Mr. Kramer are parties to a transaction bonus agreement, pursuant to which he will be eligible for a lump sum cash transaction bonus payment within five (5) days following the proposed merger, with such payment calculated based on transaction value received by ATMI's shareholders in connection with the proposed merger. In order to be eligible for the transaction bonus, Mr. Kramer generally must remain employed through the proposed merger. However, if Mr. Kramer's employment is terminated in a qualifying termination prior to the closing date of the proposed merger, he will remain eligible for the transaction bonus if the merger is consummated within one (1) year following the effective date of the transaction bonus agreement, subject to Mr. Kramer's continued compliance with restrictive covenants in any equity award agreement or other agreement between Mr. Kramer and ATMI.

Estimated Payments and Benefits

The table below sets forth an estimate of the approximate values of golden parachute compensation that may become payable to our named executive officers in connection with the merger, as described herein and under the heading "Proposal 1: Adoption of the Merger Agreement—Interests of Certain Persons in the Merger." The footnotes to the table below distinguish between the benefits available in connection with the merger without a qualifying termination

Named Executive Officer	Pension/ Non-Qualified					Tax	Total ⁽⁷⁾ (\$)
	Cash ⁽¹⁾ (\$)	Equity ⁽²⁾ (\$)	Compensation ⁽³⁾ (\$)	Perquisites/ Benefits ⁽⁴⁾ (\$)	Reimbursement ⁽⁵⁾ (\$)		
Douglas A. Neugold	3,000,000	5,758,980	—	53,418	—	—	8,812,398
Timothy C. Carlson	1,171,500	2,363,571	—	47,214	—	—	3,582,285
Daniel P. Sharkey	1,029,200	1,847,095	—	34,767	—	—	2,911,062
Christian F. Kramer	808,800	1,874,244	—	38,964	—	346,013	3,068,021
Lawrence H. Dubois	733,500	1,321,738	—	38,964	—	—	2,094,202

(1) Cash. Represents the aggregate amount of double-trigger cash severance payments to be paid by ATMI (or the surviving corporation in the merger) following a qualifying termination of employment within 548 days (in the case of Messrs. Neugold, Carlson and Sharkey) or eighteen (18) months (in the case of Messrs. Kramer and Dubois) following a change in control in an amount equal to two and a half (2.5) times (in the case of Mr. Neugold), two (2.0) times (in the case of Messrs. Carlson and Sharkey) or one and a half (1.5) times (in the case of Messrs. Kramer and Dubois) the sum of the executive's annual salary and annual target bonus, payable over a period of thirty (30) months after termination (in the case of Mr. Neugold), twenty-four (24) months after termination (in the case of Messrs. Sharkey and Carlson) or eighteen (18) months after termination (in the case of Messrs. Kramer and Dubois).

(2) Equity. Represents the single-trigger cash lump sum payment that will result from the cancellation of unvested options, Company Restricted Stock Awards and Company Restricted Stock Unit Awards upon the completion of the merger.

The amount for each named executive officer represents the following amounts: Mr. Neugold: \$886,984 for unvested options, \$1,284,758 for Company Restricted Stock Awards and \$3,587,238 for Company Restricted Stock Unit Awards; Mr. Carlson: \$382,272 for unvested options, \$543,371 for Company Restricted Stock Awards and \$1,437,928 for Company Restricted Stock Unit Awards; Mr. Sharkey: \$296,057 for unvested options, \$426,862 for Company Restricted Stock Awards and \$1,124,176 for Company Restricted Stock Unit Awards; Mr. Kramer: \$154,184 for unvested options, \$751,978 for Company Restricted Stock Awards and \$968,082 for Company Restricted Stock Unit Awards; and Mr. Dubois: \$206,130 for unvested options, \$310,182 for Company Restricted Stock Awards and \$805,426 for Company Restricted Stock Unit Awards.

The payment is determined on a pre-tax basis based on the number of shares underlying awards held as of April 30, 2014, multiplied by \$34.00 per share over the exercise price of the award (with respect to options) and \$34.00 per share (in the case of Company Restricted Stock Awards and Company Restricted Stock Unit Awards). In the case of Company Restricted Stock Unit Awards, the number of shares underlying the award was determined based on achievement of the maximum level of performance under such awards. Amounts actually paid, which could range from \$0 to the maximum amount, will be determined based on the actual performance achieved as if the closing date of the merger represented the end date of the performance period. Consistent with the requirements of Rule 14a-21(c) under the Exchange Act, the vested equity awards held by each named executive officer are not reflected in this column. For the total payments payable in respect of all stock options, Company Restricted Stock Awards and Company Restricted Stock Unit Awards, see "Proposal 1: Adoption of the Merger Agreement—Interests of Certain Persons in the Merger."

- (3) Pension/Non-Qualified Deferred Compensation. None of the named executive officers will receive any increased pension or non-qualified deferred compensation benefits in connection with the merger.
- (4) Perquisites/Benefits. Represents the value of continued medical and dental coverage under COBRA at the active employee rate for the thirty (30) month period (in the case of Mr. Neugold) or twenty-four (24) month period (in the case of Messrs. Carlson and Sharkey) following termination of employment pursuant to their employment agreements. With respect to Messrs. Kramer and Dubois, represents the value of continued health coverage under COBRA at the active employee rate for eighteen (18) months following termination of employment pursuant to the Severance Plan. In addition, with respect to Messrs. Neugold, Carlson, Sharkey, Kramer and Dubois, includes the value of outplacement services at the Company's expense for six (6) months following termination of employment. These benefits are all double-trigger.

The amount for each named executive officer represents \$15,000 for outplacement services and the following amounts for continued medical and dental coverage: Mr. Neugold: \$38,418; Mr. Carlson: \$32,214; Mr. Sharkey: \$19,767; and Messrs. Kramer and Dubois: \$23,964.

- (5) Tax Reimbursement. None of the named executive officers will receive a tax gross-up in connection with the merger.
- (6) Other. Represents the estimate of a single-trigger cash lump sum transaction bonus to be paid by ATMI (or the surviving corporation in the merger) within five (5) days following the merger.
- (7) Total. The following table shows, for each named executive officer, the amounts of golden parachute compensation that are single-trigger or double-trigger in nature, as the case may be. Single-trigger amounts include the amounts shown in the "Equity" and "Other" columns of the table above. Double-trigger amounts include the amounts shown in the "Cash" and "Perquisites/Benefits" columns. The total amounts do not reflect any reductions which may be made to payments which constitute "parachute payments" under the Code.

(“single-trigger” benefits) and the benefits payable upon a qualifying termination in connection with the merger (“double-trigger” benefits). In accordance with SEC rules, the table assumes the closing of the merger occurs on April 30, 2014, and the employment of our named executive officers is terminated without cause immediately following the closing on April 30, 2014. If the merger were to close, and the associated terminations of employment were to occur, on a date other than April 30, 2014, certain amounts paid to the named executive officers may be higher or lower than the amounts shown in the table. The information below is based on the merger consideration of \$34.00 per share.

Section 951 of the Dodd-Frank Act and Rule 14a-21(c) under the Exchange Act require that we seek a non-binding advisory vote from our stockholders to approve the golden parachute compensation payable to our named executive officers in connection with the merger. Accordingly, we are asking you to approve the following resolution:

“RESOLVED, that the stockholders approve, on an advisory (non-binding) basis, the agreements or understandings with and items of compensation payable to the named executive officers of ATMI that are based on or otherwise relate to the merger, as disclosed in the section of the Proxy Statement entitled ‘Proposal 3: Advisory Vote Regarding Golden Parachute Compensation.’”

Board of Directors Recommendation

Our board of directors unanimously recommends that you vote “FOR” approval of the non-binding advisory proposal on the golden parachute compensation payable to our named executive officers in connection with the merger.

Approval of the “golden parachute compensation” proposal is not a condition to the completion of the merger. The vote with respect to the “golden parachute compensation” proposal is an advisory vote and will not be binding on us or Entegris. Further, the underlying plans and arrangements are contractual in nature and not, by their terms, subject to stockholder approval. Accordingly, regardless of the outcome of the non-binding advisory vote, if the merger agreement is adopted by the stockholders and completed, our named executive officers will receive the “golden parachute compensation” to which they may be entitled.

Source: Form DEFM14A filed by ATMI on March 12, 2014.

Accelerated vesting of restricted stock and options is the largest potential conflict of interest for managers who have to consider the sale of their firm. Mergers provide managers with two types of windfall profits:

1. Most mergers are done at a premium to the trading price of the stock. Options that have been issued at the money or even out of the money suddenly have a large intrinsic value that will be realized when the merger closes.
2. Options vest immediately. Rather than having to wait up to 10 years and going through the associated market risk for such a long period, executive options vest with the closing and can be cashed out immediately.

Therefore, change of control provisions lead to a set of incentives that make mergers potentially more attractive for managers than for shareholders. In a scenario where a firm is expected to generate long-term growth, shareholders may be best off holding on to their shares for the long run. Executives, however, may be better off selling the firm and cashing out immediately.

An example of these conflicts is the \$11 billion acquisition of Sungard Data Systems by a consortium of private equity firms in 2005.⁴ Sungard's board was considering a spin-off of the firm's Availability Services business when private equity firm Silver Lake Partners made a proposal to acquire Sungard for \$33 per share. The board rejected the proposal until it was subsequently increased to \$36 per share. The board led lengthy negotiations with the private equity fund, until it decided to discard the idea of the spin-off in favor of the acquisition by the private equity group:

On or about March 9, 2005, management advised [Sungard's Chairman] Mr. Mann that there were severe resource constraints involved in continuing to work on completing the previously announced spin off of the Company's availability services business by the end of April, while at the same time handling all of the due diligence and other demands of the transaction with Silver Lake Partners and operating the Company's businesses. On or about March 13, 2005, after discussions among the directors, Mr. Mann informed management that, in light of the progress that had been made on the transaction with Silver Lake Partners and the strains imposed on management by continuing to work on the spin off, as well as operating the business of the Company, they should concentrate their efforts on the transaction rather than the spin off.

Def 14A filing on 5/26/2005

It is hard to see how an \$11 billion company can be too small to evaluate two competing strategic alternatives, a buyout and a spin-off. It is even more troubling if the interests of management are taken into account: Chief executive officer (CEO) Cristóbal Conde received over \$58 million from his sale of stock and options. At the time of the merger, only \$42.6 million worth of stock had vested, so that accelerated vesting alone was worth over \$15 million to him. For all 20 senior executives, the payout for their equity holdings was \$226 million, and the accelerated vesting was worth \$83 million in the aggregate. Had a spin-off occurred none of the vesting would have been accelerated.

The Sungard buyout has a peculiar feature, because management elected to forgo its change of control payments and instead invest in the company after the buyout. Irrespective of the absence of change of control payments, management nevertheless received \$11 million in tax gross-up payments for section 4999 excise taxes, of which \$3 million went to CEO Conde. The investment by management in the buyout is discussed in the next section.

Changes in executive compensation can signal to shareholders that management is preparing for an acquisition. In the case of Watchguard's acquisition by a management group with the backing of private equity firms Vector Capital and Francisco Partners, CEO Borey requested a change in his employment agreement in April 2005, shortly after receiving an indication of interest from Vector Capital in March to acquire Watchguard. The amended compensation package included change of control provisions on Borey's salary, bonus, and a lump-sum cash payment. More important, the executive stock options were repriced, because Watchguard's stock price had performed poorly recently and the options were underwater. The board adopted the changes to the employment agreement and stock options at its meeting in April 2005, unaware that discussions with a potential buyer had already occurred.

It has been argued that the change in Watchguard's compensation plans may have been a breach of management's fiduciary duties⁵, because it conferred a benefit on management that the board or shareholders would have assessed differently from management. Management knew that there was interest in an acquisition, whereas the board did not. The likelihood of an acquisition, and hence the value of the change, looks differently when one has knowledge of the discussions with the private equity firm.

CONTINUING MANAGEMENT INTEREST IN PRIVATE EQUITY BUYOUTS

The going-private transaction of Sungard Data Systems was not only an example of how management can earn windfall compensation by selling

their firms rather than pursuing other strategic initiatives, such as a spin-off. It also shows that management can have significant long-term incentives in selling to private equity funds.

In the case of Sungard, it does not appear that any strategic acquirer was a serious contender for a merger. Had there been one, it is safe to assume that management would have lost its jobs because the acquiring firm already has a management team in place. Replacement of the target management is one of the first areas in which synergies can be achieved. In contrast, private equity funds need a management team in place because they are passive investors that do not get involved in the day-to-day running of the business.

Moreover, had a strategic acquirer purchased Sungard, management would not have had the opportunity to participate in the upside of the company after the merger. Their ability to benefit from Sungard's business would have ended with the merger. In the private equity transaction, however, CEO Conde was given the opportunity to invest \$22 million in the post-buyout firm. Other managers whom the private equity buyers wanted to retain were given the same privilege. Total management investment amounted to 3 percent of the post-buyout firm. Management's participation was not limited to the funds that they invested. In addition to the capital they put at risk, management would receive up to 15 percent of Sungard under an executive option plan.

It is hard to see how management could have acted with the benefit of shareholders in mind when they were presented such a win-win opportunity. They received an immediate riskless payout from the change of control provisions and, in addition, continued to participate in the future upside of the firm. Had Sungard not gone private, management would have had only a participation in the upside of a public Sungard without a risk-free payout.

The Sungard buyout is a variation of a management buyout. In a classic MBO, the managers ultimately take control of the firm. Private equity funds are only the providers of temporary capital that is paid back over time until management has taken full control. Management buyouts of this type occur today mainly in the middle market. In the overall buyout market, it is more common to see management as co-investors along with private equity. The problems involving buyouts by private equity are discussed in Chapter 8.

There are many theoretical justifications for MBOs, most of which are valid arguments.

- The increased debt burden of a company that has been taken private instills discipline on managers to run the firm efficiently.
- The regulatory burden on private companies is less than that of public companies. Especially since the advent of Sarbanes-Oxley, the cost of being public has increased. By going private, companies can be run independently of the constraints, burdens, and cost of being public.

- Public companies are judged by their quarterly numbers, and management may have too much of a short-term focus on the next quarter. When a company has been taken private, it is easier for managers to take a long-term view rather than manage to next quarter.
- It is easier to improve efficiency in privately held companies than public ones.

Some of these arguments are disproved easily. If high levels of debt are supposed to make managers work harder and focus more on efficiency, then Microsoft or Berkshire Hathaway must be among the most inefficient firms and must be run by real slackers. Although it is true that the regulatory burden on private companies is lower than for public firms, reporting subject to Sarbanes-Oxley does not necessarily end when a company becomes private. Many firms issue bonds that are traded without restrictions, and therefore they continue to make periodic filings subject to Sarbanes-Oxley. In addition, one of the exit strategies of MBOs is to take firms public again after a few years. When the firm makes its initial public offering (IPO), it needs three years of audited financial statements and, at that point, will have to go through the entire Sarbanes-Oxley process. With many firms going public again after three to five years, the cost savings are minimal to nonexistent.

Even the argument that private companies can make better long-term decisions bears little validity. Public markets are inefficient, but not to the point that they cannot take a long-term view at all. Most biotech firms would not be in business if market were that shortsighted. If management complains about the market's lack of understanding of its strategic vision, then the fault most likely lies in an inadequate communication of the strategy.

Finally, the argument that improvements in efficiency are easier done in private companies than public ones does not carry much weight. Some of the largest companies have been the object of sometimes dramatic turnarounds. Entire sectors, such as the airlines or electric power, are regularly undergoing restructuring while remaining publicly traded. The question is why public shareholders should not reap benefits of improvements in efficiency.

The fundamental problem with management buyouts lies in the unique position that the management team holds relative to outside shareholders. Not only do the managers as buyers have an information advantage, they are also dealing on both sides of the transaction: As sellers, they provide the special committee of independent directors and its financial advisers with information about the firm's value, and as buyers, they have an interest in acquiring the firm for the lowest price possible. Even though a special committee is established to manage the sales process, management still controls the information that is available to the committee. Assuming that management will act with a complete emotional detachment in its role as seller

disregards human nature. There are many instances, some of which are discussed in this book, where the true activities of managers were hidden from the special committee. The special committee process is at best a Band Aid for a seriously conflicted situation.

LONG-TERM PLANNING IN MANAGEMENT BUYOUTS

Management should take the long view. When it comes to preparing for management buyouts, taking the long view can be toxic for shareholders. Unscrupulous managers have many ways to prime a company for an acquisition at a low price. Management controls the company and its operations and can manipulate

- *Choice of accounting principles.* By expensing rather than capitalizing costs or selecting last in, first out inventory management over first in, first out, earnings can be managed. Accounting is a particularly attractive area for manipulation because prudence dictates a conservative approach to accounting. When a company is prepared for a management buyout, some extra prudence can help to decrease the price that management will have to pay.
- *Cost structure.* Managers can avoid making improvements in efficiency and build up an earnings reserve. Earnings will be lower while the firm is public and can be boosted as soon it goes private by making minor changes to costs.
- *Management discussion and analysis.* Overly pessimistic descriptions of the business climate and outlook can depress a stock.
- *Projections.* Withholdings projections or lowballing assumptions to underestimate growth will depress a stock price.
- *Boost investment.* Some categories of investment, such as certain software development costs, are expensed rather than capitalized. It is impossible for outside shareholders to determine the exact nature of a company's expenses. For all they know, profitability is low and the firm is a dud. The benefit of the investment will be reaped by managers after a low-priced buyout.

In an extreme scenario, unscrupulous managers can make long-term plans to take a company private by depressing the stock price through a number of devices. As buyers, managers want to pay as low a price as possible for the company. If they plan an MBO well in advance, they will no longer work in the interests of shareholders but undermine shareholders in their own interest. Unfortunately, it will be almost impossible for shareholders to detect such behavior. Even courts are of little help, because they give

management sufficient leeway under the business judgment rule to cover all but the most blatantly abusive actions.

Consider an oil firm that is to be taken private through an MBO. One way to reduce its value is to slow its drilling program. An oil company must drill new wells constantly to maintain its output because yields on existing wells decline after some time. Less output equates to lower profits. There can be many legitimate reasons why drilling slows: difficult geological environment at the drilling location, wear and tear on the equipment, and labor shortages, to name but a few. It will be impossible for shareholders or courts to determine whether a slowing of the drilling program is genuinely due to such factors or whether these are just excuses to drive down the firm's valuation. Once the MBO is complete, managers can then ramp up the drilling program by investing in new equipment or hiring more employees. If sufficient time passes between the slowdown of the drilling program and the MBO and no clear linkage can be established through documentary evidence, a court will give management the benefit of the doubt under the business judgment rule.

Assume that the slowdown was due genuinely to outdated equipment. Even if this fact were disclosed, management could acquire the firm through an MBO and subsequently replace the equipment. Managers doing such an MBO would use their inside knowledge of the firm and the assets of shareholders for their own benefit.

Short of banning MBOs, there is little that can be done to overcome these problems. Disclosures can provide some relief. At this time, management is required only to release its projections performed as management. Projections performed by management as the buyer are not disclosed. Shareholders would get a better understanding of the rationale for MBOs if all projections and business plans were required to be disclosed. Current disclosures are completely inadequate. Consider, for example, the disclosures of the discussion of the board of Netsmart, shown in Exhibit 9.5. The disclosures are mostly boilerplate language and simply rephrase a few simple key points:

- An MBO is better than remaining a public company. No real rationale is given other than the "belief" of the board.
- The price is fair.
- The procedure is fair.

The filing from which the excerpt in Exhibit 9.5 is taken did not even disclose management's internal projections. They became public later, only after shareholders had filed litigation. During the litigation, it became known that Netsmart's management had restricted its search for a buyer exclusively to private equity funds. Management did not want the firm to be acquired by a strategic buyer, which probably would have brought in its own

**EXHIBIT 9.5 REASONS FOR THE MERGER GIVEN
BY NETSMART'S BOARD**

In the course of reaching its determination, the Special Committee considered the following substantive factors and potential benefits of the merger, each of which the Special Committee believed supported its decision:

- Its belief that the merger was more favorable to unaffiliated stockholders than the alternative of remaining a stand-alone, independent company, because of the uncertain returns to such stockholders if the Company remained independent in light of the Company's business, operations, financial condition, strategy and prospects; as well as the risks involved in achieving those returns, the nature of the industry in which the Company competes, and general industry, market and regulatory conditions, both on an historical and on a prospective basis;
- Its belief that the merger was more favorable to unaffiliated stockholders than the potential value that might result from other strategic alternatives available to the Company, including, among others, remaining an independent company and pursuing the current strategic plan, pursuing a significant acquisition, seeking strategic partnership arrangements or pursuing a sale to or merger with a company in the same markets, given the potential rewards, risks and uncertainties associated with those alternatives;
- The fact that, prior to entering into the Merger Agreement, the Company had been engaged in a competitive bid process which included the solicitation of indications of interest from seven potential financial buyers, the delivery of corporate and financial information to three potential acquirers that signed a confidentiality agreement with Netsmart, the receipt and response to inquiries from three potential acquirers, and the receipt and evaluation of indications of interest from one potential acquirer, which subsequently determined not to proceed with a transaction at its initial bid price. See "—Background of the Merger."
- Its belief that no other alternative reasonably available to the Company and its stockholders would provide greater value to stockholders within a timeframe comparable to that in which the merger would be completed in light of the fact that the offer from the Sponsors was the highest firm offer received after a competitive bid process;

- The fact that the merger consideration of \$16.50 per share is all cash, so that the transaction allows the Company's unaffiliated stockholders to realize in the near term a fair value, in cash, for their investment and provides such stockholders certainty of value for their shares;
- Netsmart's historical and current financial performance and results of operations, its prospects and long-term strategy, its competitive position in its industry, the outlook for the behavioral healthcare market and general stock market conditions;
- The historical market prices of Netsmart common stock, including the market price of the Netsmart common stock relative to those of other industry participants and general market indices, and recent trading activity, including the fact that the \$16.50 per share merger consideration represented a 6.7% premium over Netsmart's closing stock price on November 16, 2006 (the last business day prior to the approval of the transaction), and a 24.1% premium over Netsmart's average share price for the 20 trading day period ended November 16, 2006;
- Its belief that Netsmart's stock price was not likely to trade at or above the \$16.50 price offered in the merger in the near future. The board based this belief on a number of factors, including: the directors' knowledge and understanding of the Company and its industry; management's projections and the Company's business plan; and the various valuation methodologies and analyses prepared by William Blair and described under "Special Factors—Opinion of Netsmart's Financial Advisor" below;
- The financial analysis reviewed by William Blair at the meetings of the Special Committee on November 16 and 17, 2006 and at the meeting of the board of directors on November 17, 2006, and the opinion of William Blair, described in detail under "Special Factors—Opinion of Netsmart's Financial Advisor" that, as of November 17, 2006 (as confirmed in its written opinion dated November 18, 2006), and based on and subject to the various factors, assumptions and limitations set forth in its opinion, the \$16.50 per share merger consideration to be received by holders of shares of Netsmart common stock (other than the Management Investors, the Sponsors and their respective affiliates) was fair, from a financial point of view, to the holders of such shares;

- The efforts made by the Special Committee and its advisers to negotiate a Merger Agreement favorable to the Company and its unaffiliated stockholders and the financial and other terms and conditions of the Merger Agreement; and
- The fact that, subject to compliance with the terms and conditions of the Merger Agreement, the Company is permitted to terminate the Merger Agreement, prior to the adoption of the Merger Agreement by our stockholders, in order to approve an alternative transaction proposed by a third party that is a “superior proposal” as defined in the Merger Agreement, upon the payment to the Buyer of a termination fee of 3.0% of the total equity value of the transaction and its belief that such termination fee was reasonable in the context of break-up fees that were payable in other transactions and would not impede another party from making a competing proposal. The Special Committee believed that these provisions were important in ensuring that the transaction would be fair and the best available to Netsmart’s unaffiliated security holders and providing the Special Committee with adequate flexibility to explore potential transactions with other parties.

The Special Committee also considered a number of factors relating to the procedural safeguards involved in the negotiation of the merger, including, among others, those discussed below, each of which it believed supported its decision and provided assurance of the fairness of the merger to the unaffiliated stockholders of Netsmart:

- The fact that, other than for customary fees payable to members of the Special Committee (that were not contingent on the Special Committee’s recommendation of a transaction or the consummation of a transaction), the acceleration of options to acquire an aggregate 15,000 shares of Netsmart common stock and the receipt of payment for stock options that will be cancelled in accordance with the terms of the Merger Agreement, the directors (other than Messrs. Conway and Koop in their capacity as continuing employees) will not receive any consideration in connection with the merger that is different from that received by any other unaffiliated stockholder of the Company;
- The fact that the consideration and negotiation of the transaction was conducted entirely under the oversight of the members

of the Special Committee consisting of all members of Netsmart's board of directors other than those directors who are members of management or former members of management, and no limitations were placed on the authority of the Special Committee. Accordingly, the Special Committee was free to explore a transaction with any other bidder it determined was more favorable or likely to be more favorable than Buyer. The purpose for establishing the Special Committee and granting it the authority to review, evaluate and negotiate the terms of the transaction on behalf of the Company was to ensure that the Company's unaffiliated security holders were adequately represented by disinterested persons. None of the members of the Special Committee have any financial interest in the merger that is different from the Company's unaffiliated security holders generally (other than the exchange of options to acquire shares of Netsmart common stock in accordance with the terms of the Merger Agreement);

- The fact that the Special Committee had ultimate authority to decide whether or not to proceed with a transaction or any alternative thereto, subject to our board of directors' approval of the Merger Agreement following its approval by the Special Committee;
- The fact that the financial and other terms and conditions of the Merger Agreement were the product of arm's-length negotiations between the Special Committee and its advisers, on the one hand, and Insight and its advisers, on the other hand;
- The fact that Netsmart is permitted under certain circumstances to respond to inquiries regarding acquisition proposals and, upon payment of a termination fee, to terminate the Merger Agreement in order to complete a transaction with respect to a "superior proposal" as such term is defined in the Merger Agreement;
- The fact that the Special Committee retained and received advice from its own independent legal counsel in negotiating and recommending the terms of the Merger Agreement;
- The fact that the Opinion of William Blair addresses the fairness, from a financial point of view, of the merger consideration to be received by unaffiliated stockholders;
- The fact that the transaction will be subject to the approval of Netsmart stockholders and that members of Netsmart's

senior management and of the board of directors do not own a significant enough interest in the voting shares of Netsmart to substantially influence the outcome of the stockholder vote. As of Thursday, February 22, 2007, the record date for the special meeting, these persons collectively owned an aggregate of 492,736 shares, representing approximately 7.5% of Netsmart's outstanding common stock, excluding 549,878 shares issuable currently or issuable within 60 days upon exercise of outstanding options which if exercised would result in ownership of 14.6% of Netsmart's outstanding common stock. These shares consist of 106,348 shares owned by James L. Conway, 104,815 shares owned by Anthony F. Grisanti and an aggregate 281,573 shares owned by the other members and former members of the board of directors. See "Special Factors—Interests of Officers and Directors in the Merger" beginning on page 46; and "Common Stock Ownership of Management, Executive Officers and Certain Beneficial Owners" beginning on page 70;

- The likelihood of the Sponsors obtaining the required debt financing for the transaction, given the solidity of the commitment letter from WFF; and
- The fact that under Delaware law, the stockholders of the Company have the right to demand appraisal of their shares. See "Appraisal Rights" beginning on page 55.
- The Special Committee was aware of and also considered the following adverse factors associated with the merger, among others:
- That the public stockholders of Netsmart will have no ongoing equity participation in the surviving corporation following the merger and will cease to participate in Netsmart's future earnings or growth, or to benefit from any increases in the value of Netsmart stock;
- That if the merger is not completed, Netsmart will be required to pay its fees associated with the transaction as well as, under certain circumstances, reimburse Buyer for its out-of-pocket expenses associated with the transaction;
- The limitations on Netsmart's ability to solicit or engage in discussions or negotiations with a third party regarding specified transactions involving Netsmart and the requirement that Netsmart pay Buyer a \$3,479,527 termination fee (less any amount

of reimbursement of the Buyer and Merger Sub's expenses previously paid by Netsmart up to a maximum of \$1,159,842) (which amounts assume no exercise of options or warrants since the date of the Merger Agreement) in order for the board of directors to accept a superior proposal;

- That if the merger is not completed, Netsmart may be adversely affected due to potential disruptions in its operations, including the diversion of management and employee attention, potential employee attrition and the potential effect on the Company's business and its business relationships;
- The fact that Netsmart is entering into a merger agreement with a newly formed corporation (Merger Sub) with essentially no assets and, accordingly, that any remedy in connection with a breach of the Merger Agreement by Merger Sub could be limited, although the Sponsors have agreed to fund Merger Sub in the event that it is obligated to pay the Company's expenses upon certain terminations of the Merger Agreement and the Sponsors have provided equity commitment letters;
- The fact that the funding of the financing contemplated by the debt commitment letter issued to Buyer, or alternative financing on terms that are not materially less favorable to Buyer than those contained in the Debt Commitment Letter from WFF, is a condition to Buyer and Merger Sub's obligation to complete the merger; and
- That Netsmart's business operations will be restricted prior to the completion of the merger.

Source: Form DEFM14A filed by Netsmart on March 2, 2007, p. 23.

management team. From management's perspective, the acquisition by a private equity fund offered not only job security but the ability to participate in any appreciation of the firm's value, since it is common for private equity funds to offer managers significant equity stakes in the firm. It transpired during the litigation that management had actually used the term "second bite at the apple" in a presentation that described the advantages of a buyout. That term was omitted from the final version of the presentation.

In a landmark decision, Judge Leo Strine of the Delaware chancery court ruled that Netsmart should not have restricted its search for buyers to financial buyers only but should have considered strategic buyers as well. In particular in light of Netsmart's status as a small-cap company, it is unlikely that all potential acquirers would have known that it was for sale. For larger companies, there are fewer potential strategic acquirers, and a search can be somewhat more restrictive.

To test the market for strategic buyers in a reliable fashion, one would expect a material effort at salesmanship to occur. To conclude that sales efforts are always unnecessary or meaningless would be almost un-American, given the sales-oriented nature of our culture.

Judge Leo Strine, *In re Netsmart Technologies, Inc.*
Shareholders Litigation, No. 2563-VCS (March 14, 2007)

MILKING A COMPANY THROUGH RELATED PARTY TRANSACTIONS

The legal term *related party transactions* (or affiliated transactions) describes deals between a company and its managers, board members, or other persons who have influence in the firm and also stand on the other side of the transaction. These affiliates are in a privileged position because they have the power to influence decision making, potentially in their favor. Related party transactions always blur the line between personal assets and those of the firm. The question is only to what extent that separation breaks down. Some of the most infamous related party transactions were partnerships in which Enron's chief financial officer Andrew Fastow bought assets from his employer and subsequently sold them back to Enron for a risk-free profit.

Executives who run businesses in the same industry as the public companies that they manage often have business dealings between their private firms and the publicly traded company. In theory, such transactions are supposed to be conducted at arm's length on terms that are no worse than those an unrelated third party would offer. The more exotic the assets involved, the more difficult it becomes to determine such a fair market value. Transactions with affiliates are a convenient method to milk companies and strip assets from public shareholders.

Whenever a loss-making company with significant related party transactions is acquired by management, shareholders can bet that the company has been milked. The only reason managers would want to acquire such a company is because it is a valuable component of the executive's overall business interests. The losses in the public entity may in fact subsidize gains that the

executive makes in the privately held firms. Unfortunately, such suspicions are difficult to prove because the business judgment rule gives management enough room to maintain a seemingly fair process. As we have seen before, as long as the process is robust enough to have sufficient elements of fairness, courts will not interfere even when smoking guns abound.

Related party transactions with a company's affiliates are disclosed in a company's proxy statement. Exhibit 9.6 shows the disclosures of Central Freight's related party transactions.

EXHIBIT 9.6 RELATED PARTY TRANSACTIONS OF CENTRAL FREIGHT

We currently lease 22 active terminals and seven dormant terminals from Southwest Premier Properties, L.L.C. Southwest Premier is owned by some of our directors, executive officers and existing stockholders, including 77% by Jerry Moyes, and 10% by Robert Fasso. In 1998, we sold thirty-four of these properties to Southwest Premier, along with additional terminals that have since been sold, for an aggregate of \$27.8 million in a sale-and-leaseback transaction that was accounted for as a financing transaction. We also currently have operating leases for two active terminals owned by Mr. Moyes. We incurred aggregate expense to Southwest Premier of approximately \$6.8 million in 2004. We incurred aggregate lease expense to Mr. Moyes of approximately \$1.2 million in 2004.

Swift Transportation Co., Inc. and Central Refrigerated Service, Inc. provide us with a variety of transportation services. Mr. Moyes is the Chairman and Chief Executive Officer of Swift and the owner and Chairman of the Board of Central Refrigerated. Together, these companies provided us with approximately 25.7% of all third-party linehaul transportation services in 2004. Under these arrangements, Swift provided us with approximately \$12.0 million in services in 2004. At year end, we owed Swift approximately \$0.9 million. Central Refrigerated provided us with approximately \$2.0 million in services in 2004. At year end, we owed Central Refrigerated approximately \$0.1 million. We believe that the amounts paid are equivalent to rates that could have been obtained in an arm's length transaction with an unrelated third party.

We currently lease terminal space from Swift in Memphis, Tennessee at a lease rate of \$15,836 per month and in Fontana, California at a lease rate of \$60,500 per month. We also sublease portions of

our terminal facilities to Swift at seven different locations. Swift leases property from us in Tyler, Texas, for \$3,750 per month, in Houston, Texas, for \$15,181 per month, in Little Rock, Arkansas, for \$800 per month, in San Antonio, Texas for \$7,835 per month, and in Amarillo, Texas for \$160 per month. All leases with Swift are, either by their terms or due to expiration of the contract, on a month-to-month basis.

Under these subleases and other subleases we formerly had with Swift, our rental income from Swift was approximately \$0.4 million in 2004. We believe that the amounts paid are equivalent to lease terms and rates that could have been obtained in an arms' length transaction with an unrelated third party.

We lease independent contractor drivers and their tractors through Interstate Equipment Leasing, Inc., a company owned by Jerry Moyes. The independent contractors provide linehaul services for us at a rate per mile that we believe is equivalent to rates that could have been obtained in an arm's length transaction with an unrelated third party. We incurred expenses with Interstate of approximately \$0.5 million in 2004. At year end, we had no liability to Interstate.

Source: Central Freight DEF 14A filing of April 22, 2005, pp. 17–18.

In many instances, a creeping takeover of a firm by its management team starts with related party transactions such as these. Central Freight was indeed acquired by Jerry Moyes in 2006. The Central Freight story started when Moyes took the firm public through an IPO in 2003. Just before the IPO, the board agreed to a repricing of the leases. Annual lease payments by Central Freight to Moyes increased from \$4.4 million to \$7.2 million “to reflect fair market value.” As a result of this repricing, Moyes earned almost as much from the leases as he paid to outside shareholders when he bought out the 60 percent held by the public in 2006. While public, Central Freight never had a chance to become profitable, partly because of the lease payments to Moyes.

At first sight, it would not make sense for Moyes to acquire a loss-making trucking firm. In the context of this overall business strategy, however, the acquisition of the firm made sense: Had Central Freight remained public, it would eventually have run out of money and gone bankrupt. Moyes's terminals would probably have been idle. As a stand-alone company, Central Freight was not a viable business, but in connection with ownership of the terminals, the overall complex was likely to generate profits.

Outside shareholders did not fare well while Central Freight was public. Shares in the 2003 IPO were sold at \$15 per share, and when the firm went private in 2006, shareholders received only \$2.25 per share.

A slightly less egregious attempt to appropriate valuable assets in connection with a merger occurred when the CME Group attempted to acquire GFI Group in late 2014. As part of the merger, the company was to be broken up with a consortium of key executives acquiring the clearing and brokerage business, whereas CME Group was going to acquire GFI's European energy trading platform as well as a currency trading technology business (Exhibit 9.7).

EXHIBIT 9.7 RELATED PARTY ACQUISITION OF GFI GROUP

Transaction Structure

The transaction will be effected through a merger of GFI Group and CME Group and a concurrent acquisition of the wholesale brokerage business by an entity controlled by the private consortium of GFI Group management. GFI Group stockholders will receive shares of CME Group Class A common stock for each share of GFI Group common stock held based on an exchange ratio the numerator of which is the offer price of USD 4.55 per share of GFI Group common stock and the denominator of which will be the 10-day average closing price of CME Group common stock prior to the closing date of the transaction. Based on the closing price of shares of GFI Group common stock on July 29, 2014, the last day of trading prior to the announcement of the transaction, the exchange offer represents a premium of 46% to GFI Group's share price, for a total value of approximately USD 580m. In addition, CME Group will assume USD 240m in outstanding debt, for a total value of approximately USD 820m. Concurrently, CME will sell GFI's wholesale brokerage business to a private consortium led by current management for USD 165m in cash and the assumption, at closing, of approximately USD 63m of unvested deferred compensation and other liabilities. CME expects to retire the debt in 2015. In aggregate, the total consideration is approximately USD 655m for the Trayport and FENICS businesses before certain tax benefits that will be achieved based on the structure of the transactions.

Analysts were questioning the valuation implicit in the transaction, as it allowed management to retain the part of the business that generates consistent cash flows, whereas the CME was acquiring technology assets that were producing little cash flow but had significant potential earnings power. When two assets with such divergent characteristics are held in a single corporate structure the resulting valuation of the umbrella tends to be lower than the sum of the value of the parts. In a transaction where management can recover one of these assets for their future benefit it can be questioned whether the merger consideration was reflecting the full value of each of the two assets.

This concern was not completely misplaced. Shortly after the merger with CME Group was announced, GFI's competitor BGC Partners launched an all-cash bid for GFI that valued the firm more than 15 percent higher than the CME Group merger.

In the press release announcing BGC's bid the firm addresses the valuation concerns explicitly:

BGC believes the pending transaction with CME deprives GFI shareholders of the appropriate value of their investment, because GFI management and its Board approved a transaction that allows GFI management to purchase the brokerage business from CME at a discount. BGC remains willing to engage directly with the Board of GFI Group to negotiate a transaction. However, GFI Group's prior refusal to engage in such discussions requires BGC to take its superior, all-cash offer directly to shareholders.

BCG Partners Press release, September 9, 2014

Ultimately, the winner of the bidding war over GFI Group was BGC, which announced an agreement to acquire the company for \$6.10 per share on February 27, 2015, compared with an initial bid by the management group of \$4.55 per share on July 30, 2014.

Buyouts by Private Equity

Private equity funds always pay cash when they acquire a publicly traded company from public shareholders. In a few rare cases, public shareholders have been given the opportunity to continue to participate in the upside through continued equity interests or contingent value rights. Even though buyouts by private equity funds are similar to any other cash merger, they deserve extra attention due to the usually high leverage employed as well as the participation of current management in the buyout group.

Many private equity funds are offshoots of the corporate raiders of the 1980s. Private equity had almost disappeared during the 1970s but made a comeback in the 1980s with the buyout boom. Since then, the industry has become institutionalized, and today many of the largest pension funds and insurance companies view private equity as an asset class in its own right.

The rapid ascent of private equity can be explained at least in part by the incentives that its managers receive from their investors. Like hedge funds, typical fee structures consist of a 2 percent management fee, coupled with a 20 percent participation in any gains.¹ Many investment professionals have launched private equity funds to take advantage of this generous fee structure.

It is important to remember that private equity funds, like many other investors, are not a homogeneous group, but can have vastly different strategies and approaches to their business. Not all funds are normally in the business to buy out public companies, but do so only when an opportunity arises. Many private equity funds provide capital to privately held firms rather than acquiring public companies. Others purchase unwanted subsidiaries of larger firms or buy out public companies as part of a roll-up strategy. Some specialize in one industry only; other are active in any. Nevertheless, the common theme is that they need to sell their investments for more than they bought them at. Buying low is the first step in maximizing profit margins.

In light of the incentives that private equity managers have, it is not surprising that buying low is a key ingredient for maximizing the 20 percent participation in the profits generated by the fund. The incentive to short-change shareholders of a company that is to be taken private is therefore

much greater for private equity managers than for the managers of strategic acquirers. A number of factors give private equity an advantage over strategic acquirers. Reputation alone as a driving force is much more critical for a strategic acquirer than a private equity fund in paying public shareholders fair value for their shares. A private equity fund is much less reliant on its reputation than a corporation that must sell goods and services to the public on a daily basis. Several other factors work to the benefit of private equity over strategic buyers.

PRIVATE EQUITY'S ADVANTAGE

Private equity can have a competitive edge over strategic acquirers because selling firms are more willing to let a private equity fund perform due diligence than a rival. In case the transaction does not occur, there is less risk if a private equity fund has proprietary information and a deep insight in the business than a competitor. Even the best nondisclosure agreement is of only limited utility once a deal has collapsed. Even though private equity firms may own other firms in the same business, the perceived risk of divulging information to a financial investor is lower than releasing it to a competitor.

Private equity prides itself in its ability to take the long view and its ability to structure privately negotiated transactions quickly. The decision-making process is indeed simpler in private equity firms, where only a few partners need to agree on the viability of a transaction. The decision makers are all deal professionals who have experience putting transactions together. The situation is different with corporate buyers, where the board of directors must sign off on a transaction after multiple internal committees have given their blessing. Unless a firm is a serial acquirer, many decision makers are not familiar with the procedures for acquisition.

Public companies often complain about the pressure to manage quarterly earnings, which impedes management's ability to take long-term decisions. Private equity contrasts its ability to take a long-term approach to investing that looks over short-term fluctuations in earnings, especially when they are caused by investments into the future of the enterprise. Private equity folklore claims that buyouts benefit companies because they can reinvigorate firms, invest in their growth, and reposition them as stronger and more competitive enterprises. This may well happen in some cases, but many buyouts are done simply with the benefit of cheap debt and constitute little operational improvement. They are simply financial maneuvers.

An entire group of private equity fund made private investments in public equity, abbreviated PIPE. Because the Securities and Exchange

Commission (SEC) requires that stock acquired in a private transaction be resold only under stringent restrictions, it lacks liquidity and is worth less than regular stock. Therefore, a private equity investor gets to buy the PIPE stock for less than the shares trade at in the market and can make an extra return. Put differently, private equity can buy into public companies at a lower price than the investing public. What is even more significant is that these investments often come with board representation. Private equity firms can familiarize themselves through this channel with the firm and its industry. Then, when the firm is willing to be bought out, the private equity funds have an advantage over other potential buyers because they already know the firm.

Private equity funds do not always invest in common stock. Frequently used instruments are convertible debt or preferred securities that can be converted into common stock. The advantage is that when things work out well, the funds will convert their holdings into common stock, and they will be as well off as if they had invested in common stock from the outset. However, when there are problems, debt and preferred stock get paid first, and private equity funds end up better than the holders of common stock. When venture capital or private equity funds are present with such securities, problems can arise when companies are taken private, as we will see in the example of Aegis Communications.

Aegis Communications was a small operator of call centers and offered its clients related services that fall under the customer relationship management (CRM) label. It had acquired several other firms and was saddled with significant amounts of debt. In 1999, Aegis conducted a strategic review of its activities and issued new preferred shares to a group of investors involving turnaround firm Thayer and private equity fund Questar in order to reduce its bank debt.

Aegis continued to suffer losses, but only half of these losses were due to operations. The other half came from the preferred dividends paid to its majority shareholder, the private equity group, on its preferred shares. To make matters worse for the holders of common shares, the interest on the preferred dividends was paid in additional shares of preferred stock. Thus, the interest-on-interest effect kept diluting shareholders and increasing the burden of preferred dividends. Even though the private equity shareholders owned only 36 percent of the common stock, the convertible preferred shares gave them a 72.8 percent majority.

In March 2001, the same group of investors proposed acquiring the remaining shares from minority investors for \$1 per share, representing a total of about \$33 million. The board formed a special committee of independent directors to evaluate the proposal. The special committee consisted of two independent directors, one of whom had been appointed on the same

day the committee had been formed after one director affiliated with the buyout group had resigned. Had he not resigned, not enough independent directors would have been on the board to form a committee. A committee of one would have been too much of a farce.

Three months later, the private equity investors changed their mind and decided not to proceed with the buyout.

Another two years of losses ensued. For practical purposes, Aegis was all but bankrupt. The principal goal of the private equity funds now became the limitation of their losses. As owners of preferred stock, they were in a strong position, which was reinforced further by their control of the board. Outside shareholders were faced with the typical problems that minority shareholders encounter once the going gets tough: They get squeezed by insiders.

In July 2003, Aegis planned a sale to AllServe Systems plc, a British firm in the same sector. The payment of \$22.75 million that AllServe was to make was sufficient for the repayment of debt and some of the preferred stock. Common shareholders would have received nothing.

However, instead of the sale, a consortium of Deutsche Bank and Esser injected additional capital into Aegis in return for warrants. Simultaneously, the conversion ratio of the preferred stock held by the private equity funds was adjusted in their favor, diluting common shareholders.

Amid continuing losses and accounting deficiencies, working capital was raised by the sale of receivables and issuance of notes to Essar and Deutsche Bank. The debt was eventually assigned to World Focus and converted to equity. World Focus also acquired the common shares of Questar for \$0.0268 per share and committed to paying Questar the difference in case it were to acquire the publicly held shares at a higher price.

In the fall of 2006, World Focus bought out the shareholders for \$0.05 per share. The private equity funds were paid additional funds to compensate them for the difference. Series B preferred stockholders were paid \$3.60 per share.

This Aegis saga shows how private equity funds can protect their interests even in cases where a company is *de facto* bankrupt. Public shareholders bore proportionately much worse losses than the private equity funds that controlled the board and were able to invest through privately placed preferred stock.

CEOS DON'T WANT TO SELL TO THE HIGHEST BIDDER

The principal problem with management buyouts is that management deals on both sides of the transaction. As managers of the firm, they coordinate the sales process and have privileged access to confidential corporate

information; as buyers, they have an interest in acquiring the company for the lowest possible price. This was discussed in more detail in Chapter 9.

Picture yourself as the CEO of a company whose stock price is depressed even though you are aware that the company will do very well in the near future. For example, you may have invested in new equipment that will lower the cost of production and increase your company's profitability once it is running in production mode. The stock price may not reflect the future benefits of the investment. Efficient market theorists will claim that the market will incorporate this information into the stock price. The reality is, however, that management frequently complains that the market fails to recognize the benefits of long-term investments, and indeed this is one of the arguments used to justify private equity buyouts. As the CEO, if you want to benefit from the upside, you could either get the board to issue more options or get involved even more deeply into the firm by teaming up with a private equity firm and take the company private.

In short, imagine you are CEO Evans of Macmillan, whom we encountered in Chapter 7. His principal motivation was probably to acquire Macmillan for himself. The auction only started because Evans himself initiated the sale of Macmillan with a \$64 per share recapitalization proposal. It was only after this proposal that Maxwell became interested.

Management buyouts are the flip side of private equity buyouts. Managers must rely on private equity to fund the acquisition, and private equity funds often rely on management's knowledge of the firm, its markets, and its customers for the success of the transaction. A strategic acquirer, however, already has a management team of its own and has no use for duplicate overhead. In fact, eliminating the managers of the target firm is one of the first and easiest steps to achieve the very synergies that justify the transaction.

As a result, managers often have little incentive to sell to strategic acquirers and instead prefer financial buyers who will keep them employed. For example, candy and baseball card maker Topps received two acquisition proposals, one from its rival Upper Deck for \$10.75 per share and another from Disney CEO Michael Eisner for \$9.75 per share. Eisner acted as a pure financial buyer and indicated from the outset that he intended to keep CEO Arthur T. Shorin and his son-in-law, chief operating officer Scott Silverstein, to manage Topps. In their desire to sell to Eisner and retain their jobs, Shorin and Silverstein went to great lengths.

Details of attempts to prevent Upper Deck from buying Topps became public during a trial in Delaware's chancery court, where Upper Deck sued Topps. Upper Deck had signed a confidentiality agreement with Topps when doing its due diligence, as part of which it had agreed not to make a tender offer for Topps shares without Topps's management approval. Given management's conflicted incentives, they had little reason to help Upper

Deck make a proposal and worked actively to prevent it. Management refused to approve Upper Deck's tender offer but supported Eisner's, so Upper Deck had no choice but to sue to invalidate this provision of the confidentiality agreement.

In its regulatory filings, Topps misrepresented to its shareholders Upper Deck's acquisition proposal, claiming that there was a financing contingency. In fact, Upper Deck had already arranged financing through CIBC, subject to certain conditions. These conditions, however, all related to information about Topps, and exactly the information that Topps had refused to provide to Upper Deck under the confidentiality excuse.

Similarly, Topps overestimated the antitrust aspect of a combination of the two firms. Upper Deck's own lawyers estimated that there was little antitrust risk in a buyout, and it is difficult to see why Upper Deck would want to buy Topps just to be rebuffed by regulators. Baseball trading cards are not a competitive market, where consolidation would pose a risk to consumers. If regulators were concerned about competition in the trading card market, they would have blocked the 2004 purchase of Fleer Corporation by Upper Deck. The antitrust risk in Upper Deck's tender offer is therefore negligible.

Topps's investment bank, Lehman Brothers, was rendering advice that was clearly partial to Topps's management. Lehman's first fairness opinion used management's five-year projection, exit multiples between 9 and 10, and a cost of capital of 11 to 12 percent (actual: 11.6 percent) and found a range of values for the stock of \$9.67 to \$12.99 per share. In a subsequent opinion, Lehman eliminated the last two years of management projections, reduced exit multiples to between 8.5 and 10, and increased the cost of capital to 11.5 to 13.5 percent. These changes had the effect of reducing the theoretical value of Topps's shares to \$8.76 to \$12.57. Eisner's then proposal of \$9.75 was no longer near the low end of the range and made the price look somewhat less undervalued.

The court enjoined the Eisner transaction, which in itself is unusual, forcing Topps to make additional disclosures and to allow Upper Deck to make a tender offer. Despite its victory in court, Upper Deck eventually withdrew its tender offer, blaming it on Topps's unwillingness to provide it with crucial due diligence information.

PRIVATE EQUITY FUNDS HAVE THEIR OWN AGENDA

In some instances, there can be a large disconnect between the interests of private equity funds and those of public investors. Merisel, Inc., is an example of a transaction that got into trouble when a large investor, private equity fund Stonington Partners, L.P., needed to exit its investment.

Private equity funds are structured as partnerships with a limited duration, typically 10 years. In their early stages, the managers identify investment opportunities and draw on capital commitments from their limited partners. In the middle of their life, managers restructure the business they acquired and seek to maximize value. Toward the end of the life of the fund, managers liquidate their investments by either selling the companies to other firms or funds or by taking them public in an initial public offering (IPO) if market conditions permit. Alternatively, the funds can distribute shares of the investments to the limited partners. The latter option has several disadvantages. First, the value of the shares can be difficult to establish. This can be a problem for the manager, whose incentive fee is based on 20 percent of the profits generated. If cash is distributed to the limited partners, there is no discussion about the profit generated. However, in the case of a distribution of shares, the profit depends on the value assigned to the shares. In the case of illiquid investments, there is likely to be disagreement between the manager and the limited partners about valuation.

Second, the limited partners may have no interest in holding the shares that have been distributed to them, but want to invest the proceeds from the Stonington liquidation elsewhere. This will lead to selling pressure and depress the value of the shares. If market participants anticipate a distribution and an associated selling pressure, the stock price will decline already in advance of the distribution and depress the stock price, which in turn reduces the valuation and the profit share allocated to the manager.

For these reasons, managers of private equity funds prefer to sell rather than distribute shares.

In the case of Merisel, it was exactly this problem that convinced management to sell the firm. Stonington Partners held 60 percent of the company and were in the process of winding down their fund. Merisel's board was concerned that many of Stonington's limited partners would be unwilling to hold shares for Merisel. After all, despite being fully SEC reporting, Merisel was a micro-cap company traded on the Pink Sheets, and many investors still have an aversion to companies traded on that platform. The proxy statement for the merger states this logic very bluntly:

In September 2006, two members of the board of directors of Merisel (which we refer to as the "Board") who represent Stonington Capital Appreciation 1994 Fund, L.P., a privately-held investment fund (which we refer to as the "Fund") and the majority stockholder of Merisel, informed the Board that it believed that Merisel should preliminarily explore the feasibility and advisability of strategic alternatives that would enable the Fund to liquidate all

or a significant portion of its holdings of Merisel. According to the representatives of the Fund, termination of the Fund, which was supposed to take place at the end of 2007, would require the Fund to liquidate its security holdings, including its majority common stock interest and preferred stock in Merisel, or distribute such holdings to its limited partners. [...] the Board determined that Merisel should consider the impact on Merisel and its stockholders of the Fund selling or distributing its Merisel shares and begin evaluating strategic alternatives to maximize stockholder value.

Merisel DEFM14A, May 9, 2008, p. 25

The threat of a liquidation of the private equity fund put significant pressure on the board to sell Merisel, and one wonders whether potential buyers would use knowledge of the situation to depress the price.

The board did eventually find an interested buyer, business development company American Capital Strategies (ACAS), which agreed to acquire Merisel for \$5.75 per share in cash. However, when Merisel announced results for the first quarter of 2008 that were below its forecasts, ACAS declared a material adverse effect and sought to renegotiate the price.

On May 4 and May 6, 2008, representatives of ACAS informed Merisel's financial and legal advisors that ACAS currently does not intend to proceed with the acquisition of Merisel at \$5.75 per share in cash in accordance with the terms of the Merger Agreement. According to the representatives of ACAS, ACAS desires to renegotiate the terms of the transaction (specifically, the per share purchase price) in light of ACAS' view of the performance of Merisel's business during the first quarter of 2008.

Merisel DEFM14A, May 9, 2008, cover letter

Merisel's stock price reacted vigorously (see Figure 10.1) and dropped from \$5.50 just before ACAS's announcement to \$2.61. Several factors played a role in this drastic drop:

- The deterioration in Merisel's business itself would have justified a lower price absent the pending merger.
- The threat of a collapse led to significant selling.
- The risk that Stonington's limited partners would sell their shares in the market should the merger not happen led to selling.

Nevertheless, the underlying reason for the collapse was the potential overhang of sell orders in Merisel's stock should Stonington's distribute

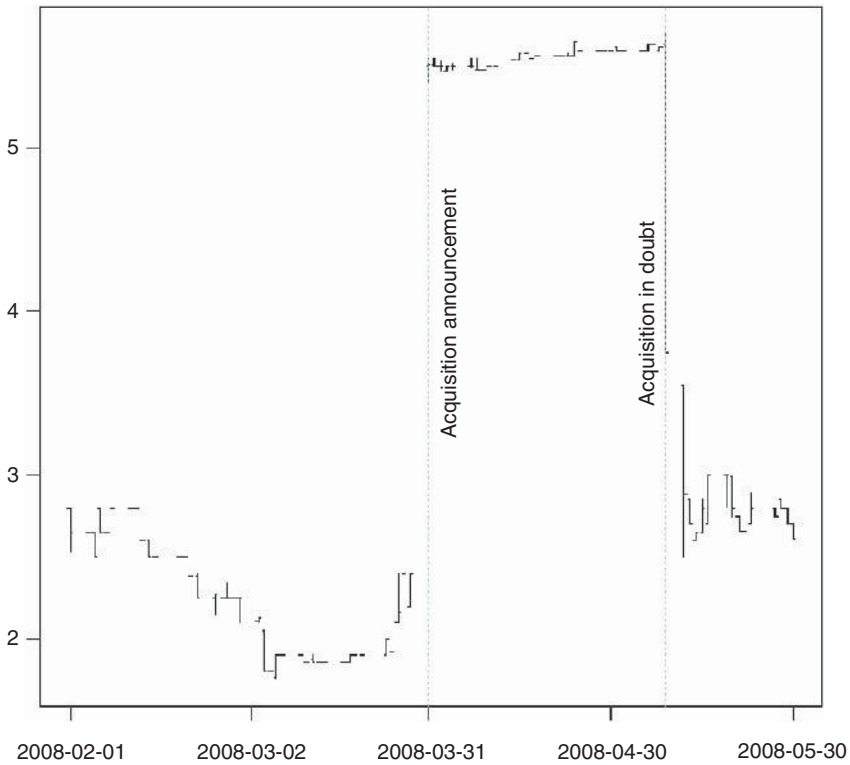


FIGURE 10.1 Stock Price of Merisel at the Time of American Capital Strategies' Acquisition Proposal

shares to its limited partners. ACAS was well aware of this problem, and it can be assumed that the pressure that Merisel was under was factored into the decision to seek a renegotiation of the merger.

The moral of this experience is that private equity funds can have interests that are opposed to those of other shareholders not only when they take firms private but also when they are investors and want to sell. Arbitrageurs must be vigilant about the agenda of these investors.

BUYOUTS AS FINANCIAL ENGINEERING

Private equity returns can be attributed to a large extent to financial maneuvering rather than managerial skill. Increasing leverage of the acquired firm by adding debt and paying out the proceeds from the debt

offering to the private equity funds is a popular method for achieving a fast payout. This can be done more quickly and requires less effort than a sale. Nevertheless, a sale of a portfolio company also can be attractive for private equity funds if they can sell it for a valuation that is much higher than that of the original firm when it was acquired originally.

For shareholders, the principal problem with these types of transaction is that there is no reason why they should be performed by a private equity fund rather than the management of a public firm. In that sense, financial engineering is tantamount to theft from the former shareholders. The gains from this maneuvering should have accrued to the public shareholders. When the same managers who helped take a firm private then manage it under a dividend recapitalization, the insult to the public shareholders is complete.

Dividend recapitalizations are a form of financial leverage where a company, after it has been acquired by a private equity firm, issues additional debt and then pays out the proceeds from the debt offering to the private equity funds as a dividend. A survey of private equity firms² found that most firms are comfortable with a debt/equity ratio of 4:1 following a dividend recap. The sooner a dividend payout is made after the buyout of a public firm, the higher the rate of return of the private equity fund will be. Therefore, private equity funds have an incentive to make a dividend recap as soon as possible after the buyout. Most see a time frame of 12 to 24 months as appropriate. A dividend recap is also an attractive alternative to an IPO: It is faster to accomplish, it can yield comparable returns, and the private equity fund continues to hold the equity for potential future upside.

The downside of dividend recaps is the high debt burden that can crush a portfolio company and drive it into bankruptcy. If this happens too quickly after the dividend recap, the private equity fund faces liability under fraudulent conveyance. As long as the portfolio company survives for an extended period of time after a dividend recap, there is little risk of legal liability for the private equity fund should the firm end up in bankruptcy. In addition, if enough procedural safeguards are in place, such as board review and independent legal and solvency opinions, private equity funds can limit their exposure to liability from recaps.

Multiple arbitrage is another egregious form of financial maneuvering that allows private equity funds to capture gains that normally would belong to shareholders. "Multiple arbitrage" refers to acquiring a firm at a low multiple and selling it at a higher multiple—for example, a purchase at a low price/earnings (P/E) ratio, and a subsequent sale at a higher P/E ratio. One case of multiple arbitrage was the acquisition of Celanese AG by Blackstone in April 2004. Celanese was listed on the Frankfurt stock exchange, where it traded at a relatively low multiple. When Hoechst and Rhône-Poulenc merged in the 1990s to form life sciences conglomerate Aventis, their

chemicals businesses were spun off as a separate firm, Celanese. It became a takeover candidate when Kuwait Petroleum Corporation wanted to sell its 29 percent stake. Blackstone acquired 84 percent of the shares for €32.50 for a multiple of 6.4 times earnings. Although this represented a 10 percent premium to the most recent trading price, the book value of Celanese was €42, or almost one-third higher.³ However, arguably Celanese was partly a U.S. company, because 60 percent of its assets were located in the United States. Blackstone benefited from the disconnect between the location of the assets and the trading market by reincorporating Celanese in Delaware, complete with a classified board and poison pill shortly after the buyout. Only nine months after the buyout, Blackstone sold Celanese Corp. in an IPO to U.S. investors. The buyout required only a cash outlay of \$650 million, but Blackstone ended up owning \$1.7 billion worth of stock and making \$1.4 billion in cash, including \$111 million in management fees that Celanese paid to Blackstone as its owners. Why management could not have reincorporated Celanese AG in the United States itself and let the original shareholders reap the benefits of a higher multiple stateside can be explained only by the large payments that management made from the buyout. Chairman Claudio Sonder made €7 million in change of control payments, which is uncharacteristically large by European standards. Also, Celanese managers participated with Blackstone in the transaction and benefited directly from a lower buyout price.

It should be noted that a small group of arbitrageurs, including Paulson & Co. and Arnhold & S. Bleichroeder, held out for a higher bid.⁴ The arbitrageurs obtained an independent valuation of Celanese AG that initially valued the shares at €42. A third valuation that was done during court proceedings found a value of €65 per share, which was subsequently adjusted upward to €73. Paulson & Co. attributes the low valuation of €32.50 in the original buyout to the “coziness” between Blackstone and the financial adviser that opined on the value, Goldman Sachs. Goldman was an investor in the Blackstone funds that acquired Celanese and therefore had an interest in obtaining a low price. The litigation between Paulson and Celanese was settled in August 2005 for €53 per share. This represents 63 percent more than the original price. Other shareholders who did not tender their shares received €51 per share.

ACTIVISTS REPLACE PRIVATE EQUITY

In recent years, activist investors have attracted considerable interest among investors and the financial press. Some activists trace their roots back to the same origins as private equity: the corporate raiders of the 1980s. Although

many of the techniques used by shareholder activists are similar to those of private equity their approach is dramatically different. They take minority stakes in companies that continue to be traded publicly and then press for operational and financial changes while the company remains public. Whereas in private equity buyouts only the investors in private equity fund benefit shareholder activism has the advantage that they benefit from the value that can be unlocked.

Typical requests of activists investors are:

- the shedding of noncore divisions and the focus of the enterprise on its core business, either through a sale or a spin-off;
- changes to management compensation, as management is sometimes incentivized to grow a business even though it may have moved to a stage where it has become a cash cow;
- monetization of assets such as real estate or intellectual property;
- changes in capital allocation, which means special dividends, share buybacks or dividend recapitalizations; and/or
- a sale of the company.

Activist investors sometimes have a background in private equity or are hybrid public equity/private equity investors. The latter gives them extra leverage because they have the ability to purchase the company outright should the sale to a third party not materialize.

Between the years 2011 and 2014, the number of activist funds has grown from 19 to 162. Their assets have increased from \$68 billion to \$205 billion over the same period.

With the growth in activist investing in recent years it can be argued that the need for private equity has diminished greatly. Although there will remain valid reasons for the existence of private equity—in particular, its ability to acquire upon short notice large businesses in private sales—buyout activity by private equity should continue to decrease as companies will either adopt many of the tricks of private equity themselves or come under pressure from activist investors or even traditional investors to optimize their corporate structures and operations.

In the early 2000s, large institutional investors were reluctant to back activist campaigns. The perception of activists at the time was overwhelmingly negative: Activist investors were viewed as a disruptive force. Many institutions feared losing access to management or mandates to manage corporate pension assets if they were known to have supported activist campaigns. These fears persist today but are mitigated by the realization that successful activists can turn underperforming companies around and thus add value overall.

The style of many activist investors has also changed over the last decade. Some of the most successful activists are not the ones who begin a campaign with a poison letter sent to management and made public instantly. Instead, activists today seek to work behind the scenes first and, although they may be required to disclose their investment early on, go public only relatively late with their grievances when management refuses to engage in serious discussions.

Numerous examples exist of where activist investors have exerted pressure on companies in recent years and implemented what is essentially a private equity agenda. Even large companies such as eBay, Mondelez, or Canadian Pacific Railway have seen activist investors influence management successfully and help the firms become more focused and efficient. Private equity is likely to become a narrower niche strategy while activist investors will assume the role previously played by private equity in making corporate structures more efficient and catalyzing mergers of companies.

One area in which activist investors have become more vocal recently is when companies sell themselves below their true value. Activist investors have achieved price increases in roughly half the cases in which they agitated for higher prices. Prominent successes include the acquisition of Dell by Michael Dell and private equity group Silverlake or the acquisition of Celesio by McKesson.

Minority Squeeze-Outs

Some of the worst shareholder abuses can be found when a majority owner of a public company seeks to buy out the minority shareholders. The majority owner controls all of the information flow and has an advantage over the outside shareholders that is similar to that enjoyed by management in a management buyout. In fact, the majority shareholder often controls management because it has majority control of the board.

Due to this control, the target company does not operate as an independent business. The larger the proportion of shares held by the majority stockholder, the more the company resembles a subsidiary of the majority shareholder. In many cases, it actually acts economically as a subsidiary, in that most of its business is done with the majority shareholder or it sells products or services that are extensions of the offerings of the majority shareholder. Therefore, minority squeeze-outs are frequently referred to as parent-subsidary mergers, in which the subsidiary has publicly traded minority interests. Statutory squeeze-outs have already been discussed in the context of two-step offers. As a reminder, in the first step of a takeover offer the acquirer aims to obtain a sufficient number of shares so that minority shareholders who have not tendered can then be squeezed out through a statutory squeeze out in a second step. As a result the acquirer obtains full control of the target. The threshold that an acquirer needs to obtain in order to squeeze out minority shareholders involuntarily varies by jurisdiction, but generally is either 90 or 95 percent almost everywhere around the world. Table 11.1 shows a list of the threshold in select countries. It should be noted that for companies that are incorporated in one country and listed in a second the applicable squeeze-out regulation is that of the country of incorporation.

Of interest for this chapter are squeeze-outs in which the majority shareholder has not yet reached the threshold level at which it can effect a statutory squeeze-out of the remaining investors. In such cases it is not unusual to see some of the worst shareholder abuse.

Protections for minority investors vary between jurisdictions. Continental Europe has developed the mechanism of domination and profit sharing agreements. In the United States, there is little to no statutory protection and shareholders can rely only on general fiduciary standards.

TABLE 11.1 Squeeze-Out Thresholds around the World

Country	Threshold (percent)
Austria	90
Australia	90
Belgium	95
China	Not allowed
France	95
Germany	95; 90*
Hong Kong	90
Italy	95; 90 unless free float sufficient to ensure trading is restored within 90 days
Netherlands	95
Spain	90
Switzerland	90 in connection with a merger; otherwise 98
United Kingdom	90

*Three different laws govern squeeze-outs. Two laws (§327a AktG and §39a WpÜG) have a 95 percent threshold, whereas since the year 2011, a simplified squeeze out (§ 62 UmwG) can be effected above a 90 percent level.

Domination and Profit Sharing Agreements

A particularity of several continental European countries (Germany, Austria, Switzerland), Domination and Profit Sharing Agreement are a formal way to transfer control of a company to its majority shareholder while minority interests continue to hold an ownership stake. These agreements are concluded once an acquirer has reached 75 percent ownership of a target in a tender offer. They are a common feature in post-merger company integration. For a minority shareholder they offer an optionality that can offer an interesting risk/return profile.

The ultimate goal of most acquirers is to obtain full control of the target firm. However, when it is not yet possible to squeeze out the minority a domination and profit sharing agreement transfers control to the acquirer and provides it with a similar economic benefit as full control—but for the continued minority stake.

At the time a domination and profit sharing agreement is entered the acquirer has to obtain an independent valuation of the company and cash out any shareholders who seek liquidity. Shareholders who continue to hold their shares have the right to receive a minimum annual dividend payment and can redeem their shares at any time at the valuation determined at the time of the conclusion of the agreement. Exhibit 11.1 shows the domination and profit sharing agreement concluded between Celesio AG and the acquirer McKesson, which concluded the agreement through a subsidiary

named Dragonfly. It can be seen that the valuation of the shares was €22.99 per share, while the annual dividend amounted to €0.83 per share. These numbers are arrived at by an independent expert who has been retained by the company.

It is common that the valuation reached in connection with a domination and profit sharing agreement is challenged in court proceedings known as *Spruchverfahren*. This litigation frequently leads to valuations in excess of what the company's expert determined at the time of the conclusion of the domination agreement. However, these cases can take several years to complete, so that arbitrageurs incur considerable timing risk.

Domination and profit sharing agreements generally are followed at a later time by the squeeze-out of minority shareholders. For that to happen, the controlling shareholder needs to reach 90 or 95 percent of shareholdings. Astute observers follow open market purchases of controlling shareholders to estimate whether a controlling shareholder is getting closer to the squeeze-out mark. However, there is no requirement that a domination and profit-sharing agreement must be followed by a squeeze-out. In principle, it is possible that a small free float remains outstanding indefinitely.

EXHIBIT 11.1 DOMINATION AND PROFIT SHARING AGREEMENT BETWEEN CELESIO AG AND MCKESSON/ DRAGONFLY (EXCERPTS)

§ 1 Management

1. Celesio assigns management of its business to Dragonfly. Accordingly, Dragonfly is authorized to issue instructions to the executive of Celesios with respect to the management of the firm.

[...]

§ 2 Profit Sharing

1. Celesio commits to distribute all of its net income to Dragonfly. Distributable are—excluding increases or reductions of reserves according to § 2.2—the maximum allowed by § 301 AktG as then in force.
2. Celesio may, with the written consent of Dragonfly, book amounts arising from net income into retained earnings to the extent permitted by commercial law and economically justified by prudent business judgment. [...]

§ 3 Loss Sharing

1. Dragonfly is responsible to Ceesio to cover any losses in accordance with § 302 AktG in its totality as then in force.

[...]

§ 4 Guaranteed Dividend and Compensation Payment

1. (1) Dragonfly guarantees the unaffiliated shareholders of Ceesio the payment of a certain profit share according to § 4.3 below for Ceesio's fiscal year 2014 ("Guaranteed Dividend"). To the extent that the dividend paid by Ceesio for its fiscal year 2014 falls short of the Guaranteed Dividend Dragonfly will pay each unaffiliated shareholder the corresponding difference. [...]
2. Dragonfly commits to paying unaffiliated shareholders of Ceesio for each fiscal year of Ceesio for which profits are shared according to § 2 a repeated compensation payment ("Compensation Payment") the duration of this contract.
3. The Guaranteed Dividend and Compensation Payment amount for each full fiscal year of Ceesio for each share of Ceesio Eur 0.83 gross [...] [subject to tax withholding].

[...]

§ 5 Share Redemption

1. Dragonfly commits to acquire from each unaffiliated shareholder of Ceesio, upon demand, such holders shares for a cash compensation ("Redemption") in the amount of Eur 22.99 per share of Ceesio.

[...]

Source: Proposed Domination and Profit Sharing Agreement (*Beherrschungs- und Gewinnabführungsvertrag*) between Ceesio AG and McKesson's subsidiary Dragonfly GmbH & Co. KGaA. Translated by the author.

U.S. Minority Shareholders

Minority shareholders in the United States have relatively fewer and weaker options to protect themselves against unfair treatment in a squeeze-out transaction or against abuse by majority shareholders generally. To complicate matters, regulations vary from state to state, although Delaware is, as in many other aspects of corporate law, the point of reference.

Under Delaware rules, because the majority shareholder already controls the majority of the company, there is no change in control, and the protection of *Revlon* duties (see Chapter 8) does not apply. The board is not obligated to maximize the price that shareholders will receive.

Nevertheless, minority squeeze-outs are subject to an entire fairness standard. The board only has to ensure that the buyout price is fair, not that it is maximized. However, it is difficult to demonstrate entire fairness when the buyer controls the board. Boards should take two measures to alleviate the concern over the buyer's control:

1. A special committee of independent directors should negotiate with the majority holder on behalf of the minority shareholders.
2. The closing should be conditioned on the acceptance by a majority of the minority shareholders.

Delaware courts will assume that if these two conditions are met, the squeeze-out of minority shareholders was fair. As I pointed out in Chapter 8, fairness is a procedural concept, not one that sets definitive price levels.¹ The principal drawback of this assumption is that neither of the two conditions deals with fairness of price. The price might not be fair, but might be large enough to be acceptable to just enough shareholders that a majority of the minority is attained. It is perfectly conceivable that an independent committee negotiates too low a price, and a majority of shareholders accepts it for fear of holding an otherwise illiquid position as minority shareholders in a firm of which the majority shareholder takes advantage through related party transactions. Just because a majority of the minority has accepted the offer, one cannot conclude that the squeeze-out was not coercive. The opposite may well be the case: If minority shareholders participate in the offer to a large degree, then that may be a sign of coercion.

Coercion can come in many forms; for example, if the target company generates losses, then minority shareholders have an interest in selling their shares sooner rather than later, especially if the losses are expected to increase. The subsidiary may eventually end up in bankruptcy and may then be rescued by the majority shareholder, especially if it is of strategic importance to its core business. However, minority shareholders probably would be wiped out in the rescue operation. Another form of coercion is the absence of an alternative to the squeeze-out. Minority shareholders remain at the mercy of the majority shareholder unless they tender their shares. Therefore, any proposal to buy out the minority shareholders will be coercive. The coercion occurs in a more subtle way than the courts would attach that label to.

Even if one denies the existence of coercion, there is no doubt that many minority shareholders are frustrated if they hold shares in a company that

is controlled by a self-interested majority investor. I have seen time and time again that frustrated shareholders will accept any deal, even a bad one, just to be able to get out of the position and move on. Stocks with a large majority shareholder generally have limited liquidity. Shareholders find it difficult to sell without driving down the price. If a majority holder makes a squeeze-out proposal, it constitutes the only liquidity event available to the minority shareholders. Under these circumstances, a bad deal may appear to be better than no deal.

BOARDS' LACK EFFECTIVENESS DURING SQUEEZE-OUTS

Similarly, the existence of a special committee of independent directors is in itself not necessarily evidence of a fair process. Many supposedly "independent" directors are beholden to management in one way or another. The standards applied to board members to verify their independence are very loose. Even family members are considered independent. In the case of Wilshire Enterprises, the cousin of the chief executive officer (CEO) was deemed to be independent under rules of what was then the American Stock Exchange. Rarely are independent directors completely detached from the majority shareholder. They were often invited to join the board by management, sometimes by that of the majority shareholder. They may work in the same industry that the majority shareholder is in. In any case, independent directors will have relationships of some sort with the majority shareholder and will find it difficult to take a confrontational stance for fear of antagonizing the majority shareholder. The world of board directors is a small one, and board positions are lucrative and prestigious. No independent director will risk jeopardizing future board appointments by being seen as too independent and working against the interest of the majority holder, even if doing so benefits the minority shareholders. The real world is much more complex than the Delaware courts' idealized role of independent directors who are completely detached from social interactions. As long as board members are humans, there will always be a structural bias in committees composed of independent directors.

The mere presence of a special committee also can serve as a charade to mask an entirely unfair process. Committee members must be engaged in the process and actively defend the interests of the minority shareholders. A committee that merely rubber-stamps decisions of the majority shareholder can hardly be regarded as evidence of a fair process. A further complication is the absence of a sufficiently large number of independent directors on the board of the subsidiary.

Directors serving on a special committee created to negotiate a merger are compensated for their extra effort and time. In addition, paying them is

supposed to align their interests with those of shareholders. These payments are made in addition to regular directors' fees.

Corporate governance firm the Corporate Library conducted a study of payments to members of special committees in merger and acquisition situations and found that a flat fee is the most common form of compensation.² Flat fees at the firms in its study varied between \$10,000 and \$75,000 with a median of \$27,500. Directors who receive fees only for attending meetings of the special committee receive between \$500 and \$10,500 per meeting, with a median of \$750. Other forms of payments are retainers—one time or monthly—combined with per-meeting fees. Monthly retainers range from \$5,000 to \$12,500. Chairs of the special committee receive higher retainers and per-meeting fees in roughly 40 percent of all cases. These figures are likely to have increased since the year 2006 when the study was conducted. Unfortunately, the study did not try to correlate payments to committee members with committee effectiveness in the buyout process.

Once a majority shareholder begins negotiations with a special committee, two implicit assumptions are made:

1. There will eventually be a sale of the minority interests.
2. The majority holder will be the buyer who will be successful in acquiring the shares held by the minority.

In instances where the board of the target takes its responsibilities seriously, its efforts will be frustrated by these two constraints. The target is, after all, a subsidiary of the majority shareholder, and it is hard to fathom another firm acquiring a minority stake in its competitor's subsidiary. Similarly, financial buyers seek control of the target firm and have no interest in a minority position in a subsidiary. Private equity funds often do acquire subsidiaries of larger firms; when they do so, however, they acquire control of the subsidiary.³

MINORITY SHAREHOLDERS ARE IN A TOUGH SPOT

Courts assume that in a tender offer, there is no coercion by the majority shareholder if the offer is conditioned on the acceptance by the majority of the minority. In the absence of coercion, the process is deemed fair.

The travesty of the majority of the minority rule in tender offers becomes clear from the 2002 acquisition of Siliconix by its 80.4 percent majority shareholder, Vishay Intertechnology. The independent committee of Siliconix was dragging its feet on Vishay's squeeze-out proposal, attempting to negotiate a better price. Vishay was unwilling to increase its price.

The market, meanwhile, voted by bringing Siliconix's trading price above Vishay's proposed price. Unable to negotiate a merger on its terms, Vishay launched a stock-for-stock tender offer. The exchange ratio was based on the prices of Siliconix and Vishay after Vishay's first tender offer. In other words, the buyout premium had all but vanished.

Invariably, a majority of minority shareholders accepted the terms of the deal and tendered. The committee of independent directors did not support the transaction but adopted a neutral stance. In the shareholder litigation that followed, the court maintained that because a majority of the minority shareholders had tendered their shares without coercion and the committee of independent directors had not objected, the transaction was fair from a procedural point of view.⁴

The situation would have been different had there been no special committee of independent directors or no clause requiring the majority of the minority shareholders to tender their shares. The acquisition of ARCO Chemical by Lyondell Petrochemical Company⁵ was structured as a merger, and the court ruled that

[...] the board cannot abdicate [its] duty by leaving it to the shareholders alone to approve or disprove [sic] the merger agreement because the majority shareholder's voting power makes the outcome a preordained conclusion.

For the Delaware court, the difference between a tender offer and a merger is that in a tender offer, shareholders have the ability not to tender and thereby derail the transaction. In a merger, once the majority holder votes in favor, the transaction will close irrespective of whether the outside shareholders support it.

Since the Siliconix ruling, this standard has been read to apply only to mergers. Under current Delaware law, companies are free to squeeze out minority shareholders through tender offers at unfair prices. The buyer only faces the disclosure requirements of Schedule 13E-3, where the buyer must explain why the transaction is procedurally fair to minority shareholders. As discussed in Chapter 9, the disclosure always states that the buyer believes that the transaction is fair.

Another strategy for a majority shareholder is to acquire shares in the open market until it reaches the threshold at which it can conduct a short form merger. The only risk with that strategy is that it must report its purchases on Schedule 13D or 13G, thus notifying the market of its actions and potentially triggering a rally in the stock price. The higher the percentage owned by the majority owner, the more likely such a strategy is to succeed. Open market purchases take time to effect. If only a small position is to be acquired, the purchase can be completed before the deadline for the filing.

The implications for shareholders of companies that have a controlling shareholder are potentially devastating. Companies that are controlled by a majority shareholder typically trade at a discount to comparable firms that have a well-diversified shareholder base. The market takes the risk of shareholders suffering at the hands of the majority shareholder into account in setting the prices at which shares trade. Shares will trade at a discount to their value absent this risk. Clearly, the market works efficiently in a micro sense, because the risk associated with the control by the majority shareholder is incorporated in the stock price. However, on a macro scale, it is a waste of capital if shareholders do not get the full value of their investment.

The experience of infoUSA (since renamed to infoGroup) shareholders illustrates the difficulties that minority shareholders encounter. InfoUSA's founder and CEO Vinod Gupta owned 37.5 percent of the company in 2005 when he made a proposal to buy out the public shareholders for \$11.75 per share for a total transaction value of \$390 million. He had been buying shares in the open market prior to his acquisition proposal and had stated that he believed himself that the shares were worth at least \$18 per share⁶ and that he would acquire more shares in the future. The timing of the proposal was highly suspicious: It came only days after an earnings release had led to a drop in the stock price by more than 20 percent (see Figure 11.1). A special committee of independent directors was formed and rejected the proposal in August 2005. It presented Gupta with two alternatives: Either let the board conduct a market check to find what price other buyers may be willing to pay for infoUSA, or Gupta could negotiate with the special committee under an exclusivity arrangement, but he would have to accept a market check after the signing of a merger agreement. When confronted with these alternatives, Gupta withdrew his acquisition proposal. The special committee of the board was disbanded in a split vote.

The end of the formal buyout negotiations did in no way stop Gupta's attempt to acquire control of the firm. InfoUSA had a poison pill in place that prevented any shareholder from acquiring more than 15 percent of the firm. However, Gupta was exempt from the poison pill and could acquire more shares. He had two methods at his disposal to obtain more shares: open market purchases, which he was doing already, and the exercise of executive options that he received as part of his CEO compensation package. Instead of buying infoUSA in one single transaction, Gupta could take control of the firm in a creeping takeover by increasing his ownership percentage through his option holdings and open market purchases.

Gupta took advantage of his options to increase his holdings when dissent from shareholders emerged prior to the 2006 shareholder meeting. An activist hedge fund, Dolphin Limited Partnership, was dissatisfied with the continued lackluster performance of infoUSA's stock and attempted to

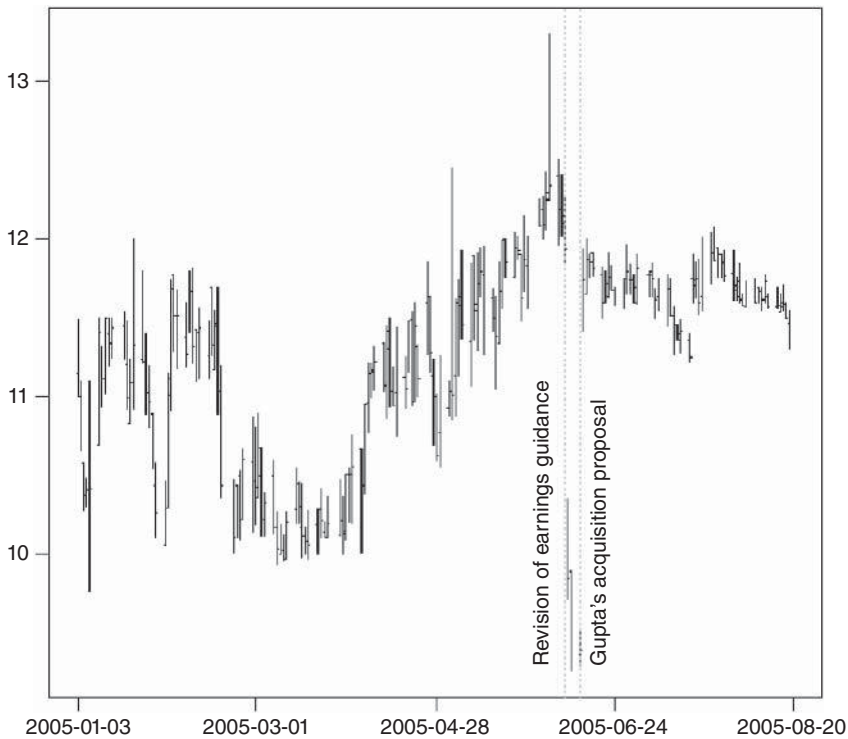


FIGURE 11.1 Stock Price of infoUSA after the 2005 Earnings Release and Gupta's Acquisition Proposal

have its own nominees elected to the board in a contested election. Just prior to the record date for the shareholder meeting, Gupta exercised some of his options and hence boosted his holdings in the firm by 1.2 million shares to 40 percent. As a result of this increase in share ownership, infoUSA's director nominees were elected in the contest by a narrow margin with 51 percent of the votes. Gupta's share ownership was likely to increase even further: Between 2004 and 2007, he was the recipient of all of the company's stock awards. In 2007, a new stock option plan was put to a vote by shareholders that would have increased his holdings by another 3.5 million shares, equivalent to 6 percent of the shares.

Shareholders had another reason to be suspicious: Gupta's holdings reported prior to the contested director election to the Securities and Exchange Commission did not include all of his shares, and over 150 transactions were not reported. It was only after Dolphin initiated the proxy contest that Gupta's shares and the missing transactions were reported. To

make matters worse, it was discovered later through litigation initiated by Dolphin that Gupta never intended to acquire the company. He stated in a September 2005 letter to that board:

After we lowered our revenue guidance due to the Donnelly Market shortfall, our stock got crushed. At that time I had no choice but to support the stock. That was the primary reason for offering \$11.75 for the shares. If you recall, the stock had dropped to \$9.20 per share. After my offer, even though it has been withdrawn, the stock is hanging in around \$10.80 per share. Under the circumstances, nobody can sell their shares short because they know I am there to support it.

September 7, 2005, letter by Vinod Gupta to the Board released by Dolphin Limited Partnership on www.iusaccountability.com.

Dolphin's litigation also turned up many instances where Gupta's personal expenses appeared to have been paid by infoUSA, such as an 80-foot yacht for which no evidence of corporate usage was found, personal use of company jet, and a skybox.

The overall effect of these revelations was that confidence in infoUSA waned. Shareholders saw a dual threat from a creeping takeover by Gupta. In an attempt to alleviate these concerns, Gupta entered into a one-year standstill agreement in July 2006 under which he agreed not to acquire any additional shares. The agreement was subsequently extended by another year through 2008. But the market had already voted with its feet: infoUSA's stock declined (see Figure 11.2) to a low of \$3.78 in 2008. It was only after Gupta's departure as CEO in August 2008 that the trend in the stock's performance reversed. Nevertheless, while Gupta controlled over 40 percent of the shares, the company remained a highly risky investment, and shareholders had to accept a low valuation for their shares to compensate for the risk associated with a majority shareholder.

Gupta was never actually a majority holder of infoUSA in the sense that his ownership never exceeded 50 percent. Nevertheless, his holdings were large enough to make him a de facto majority holder:

- His holdings amounted to 40 percent, giving him the largest single vote.
- As beneficiary of the stock option plan, he was slowly increasing his holdings to the 50 percent level.
- In contested board elections, candidates backed by management won even though the vast majority (roughly 90 percent) of outside shareholders voted for the dissident slate of candidates.
- As CEO, he wielded significant control over the firm.

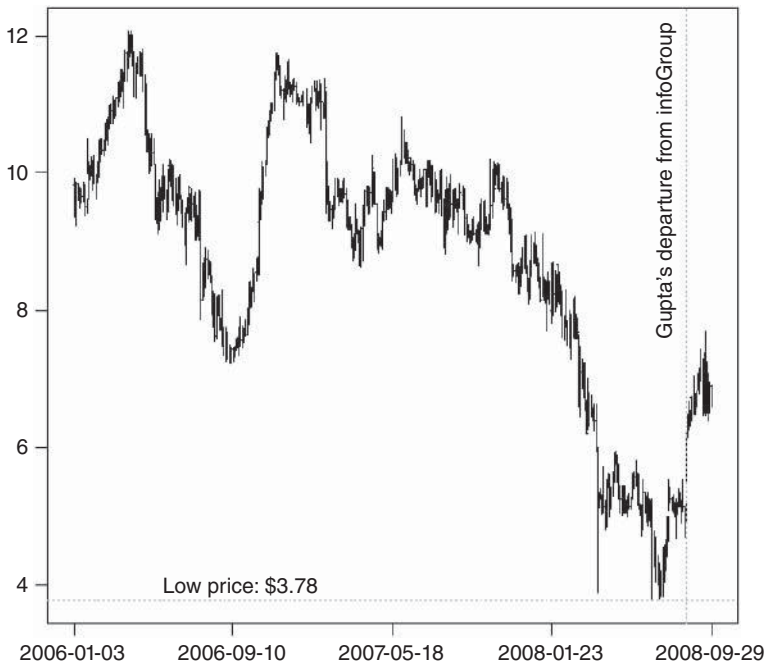


FIGURE 11.2 infoUSA's Stock Price, 2006–2008

The problems that shareholders face with quasi-majority shareholders are a hint of what can happen when an actual majority holder controls a firm. Minority squeeze-outs where the majority owner controls more than 50 percent of the firm can be even worse.

Chaparral Resources⁷ was a company incorporated in Delaware and traded in the United States that owned oil concessions in Kazakhstan. The government of Kazakhstan wanted to maintain several competing national oil firms to be active rather than having a company from one single nation dominate its oil industry. Because of their geographic location, the oil fields of Kazakhstan were of interest to both Russia and China. China's national oil company, CNPC, and Russia's Lukoil had been battling to acquire PetroKazakhstan, a Canadian oil company with fields in Kazakhstan, in 2005. A Canadian court eventually ruled against Lukoil's argument that it had a preemptive right to acquire one of PetroKazakhstan's subsidiaries. CNPC then purchased the company for \$4.2 billion.

In the meantime, a sideshow that made fewer headlines was Lukoil's success to acquire Nelson Resources for \$2 billion. Nelson was incorporated in Bermuda and traded in Canada. Lukoil's acquisition price amounted to

roughly 15 percent less than the trading price of Nelson on the Toronto Stock Exchange prior to the announcement. Luckily for Nelson's insiders, they had exercised their options and sold shares prior to Lukoil's takeover proposal.

Ironically, CNPC reciprocated by suing Lukoil over a stake in a joint venture that it had with Nelson, claiming to have preemptive rights to purchase Nelson. In the end, Lukoil succeeded and acquired Nelson. Kazakhstan's government was happy because Lukoil's win at Nelson restored the balance between Russia and China in its oil fields.

For shareholders of Chaparral Resources, however, the Nelson acquisition was the beginning of a nightmare. Nelson owned 60 percent of Chaparral Resources, and now that it was part of Lukoil through its subsidiary Lukoil Overseas Ltd., that firm's management controlled these shares. The successful takeover of Nelson emboldened Lukoil's management to attempt the same at Chaparral.

Lukoil began by fudging the 2005 annual report on form 10-K. During its preparations, a Lukoil executive instructed Chaparral's staff to "add something a little negative to the report" and complained that it conveyed a "positive impression" and used "positive words." Production data that would have shown growth was also removed from the report, to make sure that investors saw nothing positive in the firm. Production had already been falling because the lease for the only drilling rig on its Karakuduk oil field had expired. The lease's expiration was in no way an extraneous event. It had been orchestrated carefully by Lukoil. The rig was leased jointly by Lukoil and Chaparral, and Lukoil simply refused to renew its lease. The rig's owner was urging a prompt renewal, fearing a loss of income, but Lukoil prevailed. Moreover, leases for more rigs had already been lined up and an increase in production was forecast by Chaparral internally, but this information was not communicated to shareholders in the annual report. The gloomy tone of the report and absence of good news had the desired effect: Chaparral's stock dropped by 23 percent (see Figure 11.3).

Lukoil's executives regarded the Karakuduk oil field as theirs, even though it was exploited jointly by Lukoil and Chaparral. In an e-mail, the chief financial officer of Chaparral complained about Lukoil's regional director for Kazakhstan, Boris Zilbermints, making "noises" about payments from the oil field's revenue to Chaparral, which "is letting the minority shareholders receive funds." This was an example of what a Chaparral director described in another e-mail as "the Russian way of doing business." So were some of the other scare tactics that Lukoil used. It threatened to shut in the Karakuduk field if no deal were reached, or to cease development or fire the board of directors.

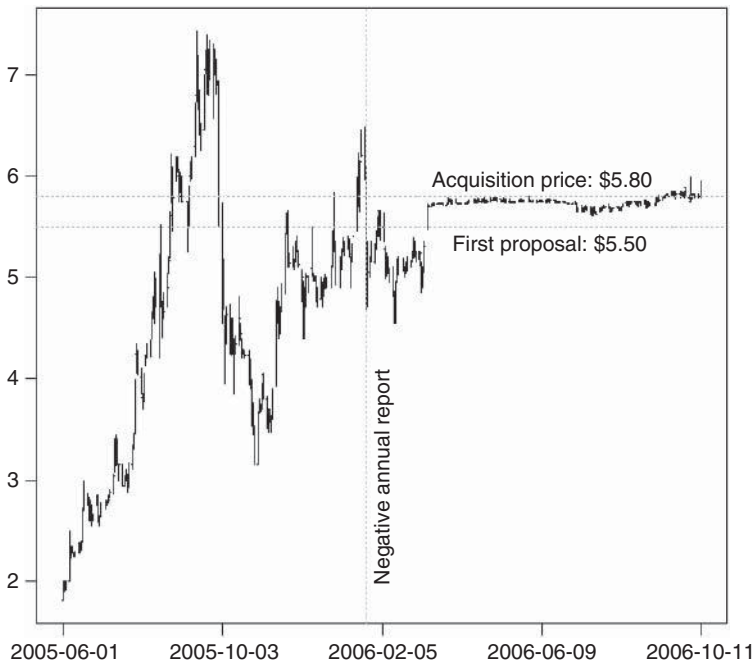


FIGURE 11.3 Chaparral Resources

The board of directors did create a committee of independent directors to evaluate Lukoil's buyout proposal. At least one of the two directors on the committee, however, appears to have had more concern for Lukoil's interests than for those of the minority shareholders. He leaked the valuation range that Chaparral's financial adviser had calculated to Lukoil, so that Chaparral was negotiating with a buyer that knew the price range of the seller. The two directors appear to have been well aware of the problematic nature of the buyout, as they negotiated a highly unusual clause in their indemnification agreement: If there was a lawsuit in connection with the merger, they would be paid \$300 per hour for time spent defending themselves. In other words, the less they represented shareholders, the longer the lawsuits would last, and the more they would be paid.

With the stock price depressed artificially, Lukoil made a lowball offer for the shares of Chaparral's minority shareholders. Lukoil's initial bid of \$5.50 per share was soon raised to the final price of \$5.80 when it became clear that this was a level at which one institutional holder was willing to sell. While Chaparral and Lukoil were debating whether \$5.50 or \$5.80 was the right price, Chaparral's financial adviser indicated that the value of the firm in the \$8 to \$11 range.

Lukoil completed the acquisition for \$5.80 per share, but this was not the end of the road for the minority shareholders. The rest of the story is discussed in Chapter 13.

FAMILY CONTROL

Control of publicly traded companies by their founders and their families, often for several generations, is the norm outside of the United States. Frequently, they exercise control while owning less than the majority of the capital. But even within the U.S. governance it is more widespread than one would expect. Governance analysts at the Corporate Library estimate that 170 of the 1,800 firms that it tracks, or almost 10 percent, can be classified as family firms. These are firms where “family ties, most often going back a generation or two to the founder, play a key role in both ownership and board membership.” An additional 163 firms are classified as *founder firms*, in which the founder owns more than 20 percent of the equity.⁸ Overall, almost one publicly traded firms in five is under the influence of a founder or family. Even some of the largest companies in the world like Google or Alibaba have structures that allow their founders to exercise effective control at the expense of minority shareholders.

Two principal structures allow founders and their families to exercise control over a company when they own only a minority of the capital:

1. Holding companies and interlocks
2. Supervoting shares

Holding companies are more common in Europe and Asia as a means of controlling a firm, whereas supervoting shares are the method of choice in the United States. This is partially due to listing rules—some exchanges, such as the Hong Kong Stock Exchange, insist on rigorous implementation of the one share, one vote principle and do not allow companies with multiple share classes to list. As a result, tycoons have found other ways to achieve the same goal. And, of course, it should not be forgotten that in some cases a family or founder does own an outright majority of the shares the traditional way and can exercise control directly.

Control through Holding Companies

The example of Dutch beer brewery Heineken illustrates well how holding company structures can allow a group of holders to control the entire firm despite owning only one quarter of the economic capital. The Heineken family around Charlene de Carvalho-Heineken controls through L’Arche

Green NV, at the time of writing, 51.74 percent of Heineken Holding NV, a holding company that owns 50 percent of the outstanding shares of Heineken NV, the actual brewing business. The other half of Heineken NV and the other 48.26 percent of Heineken Holdings NV are held by outside investors, including the strategic investor FEMSA, a Mexican brewing concern. No potential acquirer could purchase Heineken NV without the support of Heineken Holding NV, giving the family effective control with only about one quarter of the economic interest.

That alone would be sufficient to frustrate potential acquirers. However, the relationship between the operating company and the holding goes even deeper. The holding is managed by the executive of the operating company, so that the two entities are very closely intertwined, further complicating attempts to acquire the firm. It is clear that any hostile takeover or even just an activist investor seeking to remove bad decision takers would be frustrated in their approach.

While the structure of Heineken and its holding company is straightforward, in many instances multiple layers of holdings can make it much harder for arbitrageurs to understand how strong someone's control over a firm actually is. In Asia, ownership through multiple vehicles creates a complex web of interlocks that can be very difficult for investors to penetrate. In addition, disclosure rules are often so weak that determining beneficial ownership and control of a public company requires some effort. Hong Kong in particular is well-known for the complexity of some of the holding company structures that patriarchs use to control their empires. For example, Asia's most prominent businessman Li Ka-shing controls 39 percent of Cheung Kong, which, in turn, controls 52.4 percent of Hutchinson Whampoa. While it owns only 46 percent of Hui Xian REIT directly, other Cheung Kong subsidiaries hold additional shares, namely Hui Xian Holdings Ltd. and Cheung Kong China Property Development, giving Li Ka-shing effective control.

Control through complex holding company structures has many disadvantages and shareholders risk receiving well below fair value when the majority owner decides to take the company private. An example that fits this description is Guoco Group, a diversified Southeast Asian conglomerate that originated in Malaysia but now is listed in Hong Kong with property development, banking, leisure, and investment interests in the region. Most notably, it controls 15 percent of Bank of East Asia, itself a perennial takeover candidate and one of the most valuable individual parts of Guoco. 74.5 percent of Guoco Group is held by Hong Leong Co Malaysia, which, in turn, is controlled by the two brothers Quek Leng Chan (49.27 percent) and Kwek Leng Kee (36.04 percent). On December 12, 2012, the two brothers issued a takeover proposal to acquire all remaining shares in Guoco Group for HKD88 per share. Although this represented a

nice premium to the pre-announcement trading level of around HKD 70, it was an atypically large 40 percent discount to book value. For years, Guoco had been trading among Hong Kong's holding companies with the largest discount to book value, so it could be argued that the Kwek/Quek brothers were simply incorporating a market discount into their pricing. However, if not at privatization, when else should shareholders be entitled to receive the full value of their shares? Besides, several factors suggest that the lowball bid may have been engineered carefully with the intention of paying as low a price as possible. Guoco had booked large marked-to-market losses in its investment portfolio, so at a minimum the transaction was timed to coincide with a period of bad earnings. Worse, recognition of the losses may have been timed with a view to the intention to launch a takeover offer. Guoco also omitted its interim dividend in March 2013, when it had become increasingly clear that shareholders were unwilling to tender. This was clearly designed to coerce investors to tender. But shares were trading above the proposed HKD88 price, suggesting that shareholders thought the price was inadequate.

On April 24, 2013, Guoco then raised its bid from HKD88 to 100 per share, still a 37 percent discount to the then slightly higher book value of HKD 156 per share. At this time, Hong Leong made a no-increase statement, which would prevent it not only from increasing the price in this offer, but also from making a new offer for another year. The offer comprised two alternatives:

1. Under the unconditional offer alternative, shareholders received HKD88 per share plus an additional HKD12 per share should Hong Leong's stake reach the 90 percent threshold at which it can launch a statutory squeeze-out.
2. Under the conditional offer alternative, shareholders would have receive HKD100 only if Hong Leong reaches the 90 percent ownership threshold.

In the end, only 2.57 percent of shares were tendered under the unconditional option, and 8.76 under the conditional option. Shareholders were not willing to accept this lowball offer. Indeed, it had a positive impact on the shares, as it set a new ceiling on the discount to NAV should the majority holders seek to squeeze out the minority investors again. Consequently, the shares did not trade down after the offer lapsed.

Share Class Structures

In other instances, companies have a dual share class structure where the founder or family hold A-class shares with more voting rights than those

held by public shareholders. Many large U.S. firms under family control fall into that category, but many stock exchanges outside of the United States do not allow companies with dual share class structures to list, making this control technique impractical there. Prominent examples are many publicly traded newspapers, including News Corp. and the *New York Times*. But even when a 20 percent holder does not have voting control through the ownership of shares with higher voting rights, a 20 percent holding can be the largest single block of shares held. If the remainder of the shares are held widely in small lots, and many of these holders are retail investors who do not exercise their voting rights, then even a stake as small as 20 percent can yield effective control of a firm.

In general, family influence is a double-edged sword. Sometimes control by a family can improve performance because interests of shareholders, management, and the majority holders are aligned. Unfortunately, there are also many counterexamples where family control led to a meltdown. Some spectacular failures occurred in companies led by controlling families, most recently at Adelphia and Refco. The differentiating factor between the few family-controlled firms that perform very well, the majority that underperforms, and the isolated cases of meltdowns is governance. The Corporate Library assembled a list of five red flags that help investors distinguish between good and bad family-controlled firms:⁹

1. *Multiple share classes.*

Some firms with multiple classes of shares have both classes traded publicly, while others have special family-only classes.

2. *Special voting rights.*

Families sometimes have the right to elect a majority of the board of directors, or a number of directors that represents less than the majority but is still larger than the economic ownership of the family in the firm. Special voting rights are usually coupled with multiple share classes.

3. *Layered ownership structures.*

The Corporate Library warns investors to steer clear from companies owned by multiple nested family trusts.

4. *Related party transactions.*

Methods managers use to milk public companies through related party transactions were discussed in Chapter 9. In family-controlled firms, the art of related party transactions often is perfected even more. The family earns income from its ownership in the firm, employment by the firm, and transactions with the firm. Leases of corporate headquarters or special loan arrangements are examples of such transactions. The principal problem with related party transactions is that the distinction between personal and corporate assets blurs.

5. *Special takeover defenses or change of control provisions.*

Change of control provisions are sometimes even more favorable for families that own and manage a company than for employee managers. Stockholder voting agreements can lock owner-managers in even more effectively than other takeover defenses.

Arbitrageurs looking at acquisition proposals involving family firms must take these factors into account when estimating the probability of failure. If a company is to be acquired by its controlling owners, arbitrageurs often will encounter some of the problems described in the first section of this chapter. If outsiders make a proposal to acquire a family-controlled firm, the dynamics can become difficult to judge. The acquisition of Anheuser-Busch Cos. by InBev SA, which was discussed in Chapter 5, led to a split in the founding Anheuser Busch family. One group of family members around the CEO of the firm, August A. Busch IV, was unwilling to accept InBev's unsolicited initial bid of \$60 per share. Another part of the family supported InBev's proposal. InBev sought to benefit from the rift in the family by proposing to elect Adolphus A. Busch IV, the CEO's uncle and great-grandson of Anheuser-Busch's founder, to the board to replace August. The strategy worked in that the family eventually consented to an acquisition at a price that was \$5 higher than the initial bid.

Sometime controlling families simply are unwilling to sell to outsiders. Consider, for example, the 2007 proposal by the Cagle family to take poultry producer Cagle's Inc. private (see Exhibit 11.2). Cagle's was listed on the American Stock Exchange.

EXHIBIT 11.2 LETTER BY THE CAGLE FAMILY TO THE BOARD OF CAGLE'S INC.

Dear Board Members:

This letter is to confirm that James Douglas Cagle together with certain members of his family and Cagle Family Holdings LLC, a Georgia limited liability company (sometimes referred to in this letter as the Cagle Family Group) are pleased to offer \$9.00 per share in cash to acquire all of the stock of Cagle's, Inc. (the "Company") not owned by the Cagle Family Group. This offer represents a premium of 19 percent over the November 8, 2007, closing price. We believe the shareholders will find this proposal, which provides for all cash consideration at a premium value, very attractive.

We propose a transaction in which we will acquire, through a merger, the Company stock we do not own. We are well positioned to negotiate and complete a transaction in an expedited manner with a high degree of closing certainty. To effect this transaction we are close to finalizing the last details on a financing commitment from AgSouth Farm Credit, ACA for \$27 million, \$17 million of which will be available to fund the transaction.

The members of the Cagle Family Group together hold a controlling stake in the Company's common stock. We are not interested in selling our shares pursuant to an alternative transaction and will only consider a transaction in which we purchase all of the outstanding shares of the Company not now owned by us. Given our controlling stake in the Company and the nature of the proposed transaction, we expect that you will form a special committee of independent directors to consider this offer and respond on behalf of the Company and its other shareholders.

Source: Form SC 13D filed by Cagle's Inc. on November 13, 2007.

The family stated unambiguously that it was “not interested in selling our shares pursuant to an alternative transaction and will only consider a transaction in which we purchase all of the outstanding shares.” The family eventually withdrew its acquisition proposal. With the benefit of hindsight, a sale of the company to a strategic buyer who could have given the business more scale and synergies would have been the best option. Cagle's filed for bankruptcy on October 19, 2011. All of its assets were eventually auctioned off to Koch Foods Inc.

PART

Three

Investing in Merger Arbitrage

Government Involvement

Attitudes of governments and the general public toward business vary around the world. Even in the United States, where a national consensus toward business appears to manifest itself through an ardent free-market rhetoric, the reality is frequently much different and government does, at least in some cases, take a strong interest in merger activities. Its different agencies engage in ways that both help and hamper arbitrageurs in their business. The multitude of federal and state agencies that are involved in the regulation of takeovers is confusing and, worst of all, inconsistent. Different actors have conflicting goals and priorities.

Outside of the United States, government interference in mergers and acquisitions tends to be more prevalent, and the often associated strong anti-business rhetoric reflects social norms.

Government involvement in mergers and acquisition occurs on several levels:

- Direct regulation of the merger process was discussed in Chapter 8.
- Competition regulation seeks to mitigate the impact of mergers on the markets in goods and services.
- National security regulations have become more prominent over the last decade and seem to evolve into protectionist vehicles akin to what health and safety regulations do to free trade.
- Ancilliary regulations include foreign exchange restrictions. Politics play a role.

Companies take the potential threat of government blocking a planned merger seriously and add lengthy clauses to their merger agreements to address these potential obstacles. Exhibit 12.1 shows these clauses in the case of the merger between Tokyo Electron and Applied Materials. Most regulatory problems discussed in this chapter are addressed in this agreement.

In general, securities regulators are not a big obstacle to deal completion. In the United States, the Securities and Exchange Commission (SEC) casts itself as an investor advocate that promotes full disclosure. State legislatures, in contrast, tend to be beholden to the interests of corporate management

EXHIBIT 12.1 REGULATORY CONCERNS IN THE MERGER AGREEMENT BETWEEN TOKYO ELECTRON (TEL) AND APPLIED MATERIALS

4.7 Regulatory Approvals and Related Matters.

- a) Each of Applied and TEL shall use its reasonable best efforts to file (and to cause the other Applied Entities and other TEL Entities to file), as soon as practicable after the date of this Agreement, all notices, reports and other documents required to be filed by such Party with any Governmental Body with respect to the Business Combination and the other Contemplated Transactions, and to submit promptly any additional information requested by any such Governmental Body. Without limiting the generality of the foregoing, Applied and TEL shall, as soon as practicable after the date of this Agreement, prepare and file (or cause to be prepared and filed) the notifications required under any Legal Requirement that is designed to prohibit, restrict or regulate actions having the purpose or effect of monopolization or restraint of trade (collectively, “Antitrust Laws”) in connection with the Business Combination. Each of Applied and TEL shall use its reasonable best efforts to respond as promptly as reasonably practicable to any inquiries or requests received from any state attorney general, antitrust authority or other Governmental Body in connection with antitrust or related matters. Subject to Section 4.7(e) and Section 4.7(f), each of Applied and TEL shall use its reasonable best efforts to take, or cause to be taken, all actions necessary to consummate the Business Combination and make effective the other Contemplated Transactions.
- b) Without limiting the generality of Section 4.7(a), each of Applied and TEL shall use its reasonable best efforts to submit a draft joint voluntary notice and, following the receipt of any comments thereto, a final joint voluntary notice, to CFIUS (the “Exon-Florio Filing”) as promptly as reasonably practicable following the date of this Agreement. Applied and TEL shall cooperate in preparing, pre-filing and filing with CFIUS a joint voluntary notice of the Business Combination in accordance with applicable Legal Requirements. Each of Applied and TEL shall use its reasonable

best efforts to respond as promptly as reasonably practicable (but in any event within the time required to avoid possible rejection or deferred acceptance of the Exon-Florio Filing under 31 C.F.R. § 800.403) to any inquiries or requests received from CFIUS in connection with such joint voluntary notice. Each of Applied and TEL shall use its reasonable best efforts to obtain the CFIUS Approval; provided, however, that in no event shall any Party be required to take any action (or to cause any of its Affiliates to take any action) in order to obtain the CFIUS Approval that would (or would reasonably be expected to) result in a material and adverse impact on the business, financial condition or results of operations of HoldCo and its Subsidiaries, taken as a whole, following the Business Combination Effective Time.

[...]

- e) Notwithstanding anything to the contrary contained in this Agreement, in the event that any Legal Proceeding is initiated (or threatened to be initiated) by a Governmental Body challenging the Business Combination or any of the other Contemplated Transactions, each of Applied and TEL shall use its reasonable best efforts to cooperate with each other and to contest and resist any such Legal Proceeding until the entering into by a court of competent jurisdiction of the first to occur of any preliminary or permanent injunction or other Order that preliminarily or permanently prohibits, prevents or restricts the consummation of the Business Combination or any of the other Contemplated Transactions. Neither Applied nor TEL shall make (or permit any of its Affiliates to make) any offer, acceptance or counter-offer to, or agreement with, any Governmental Body with respect to any proposed settlement, consent decree, commitment, remedy, discovery, admissibility of evidence, timing or scheduling, in any case with respect to any Legal Proceeding initiated by a Governmental Body related to the Business Combination or any of the other Contemplated Transactions, without the consent of the other (which consent shall not be unreasonably withheld, conditioned or delayed).
- f) Notwithstanding anything to the contrary contained in this Section 4.7 or elsewhere in this Agreement, neither Applied nor TEL shall have any obligation under this Agreement or in connection with the Contemplated Transactions to: (i) dispose of, transfer or exclusively license, or cause any of its Subsidiaries to dispose of,

transfer or exclusively license, any assets to any Person (other than Applied or TEL), or to commit to (or cause any of its Subsidiaries to commit to) dispose of, transfer or exclusively license any assets to any Person (other than Applied or TEL); (ii) discontinue or cause any of its Subsidiaries to discontinue, or commit to (or cause any of its Subsidiaries to commit to) discontinue, offering any product or service; (iii) non-exclusively license or otherwise make available, or cause any of its Subsidiaries to non-exclusively license or otherwise make available, to any Person (other than Applied or TEL) any technology, Intellectual Property or Intellectual Property Right, or to commit to (or cause any of its Subsidiaries to commit to) non-exclusively license or otherwise make available to any Person (other than Applied or TEL) any technology, Intellectual Property or Intellectual Property Right; (iv) hold separate or cause any of its Subsidiaries to hold separate any assets or operations (either before or after the Business Combination Effective Time), or to commit to (or cause any of its Subsidiaries to commit to) hold separate any assets or operations; or (v) make or cause any of its Subsidiaries to make any commitment, or to commit to (or cause any of its Subsidiaries to commit to) make any commitment (to any Governmental Body or otherwise) regarding its future operations or the future operations of any of its Subsidiaries; provided, however, that Applied and TEL shall be required to take (and to cause their Subsidiaries to take) the actions set forth in clauses “(i)” through “(v)” of this Section 4.7(f) if, but only if, such actions, considered collectively, would not reasonably be expected to result in a Substantial Detriment. Such actions shall be deemed to result in a “Substantial Detriment” if such actions, considered collectively, are reasonably expected to result in a reduction of the combined annual consolidated revenues of the Applied Entities and the TEL Entities, collectively, of at least \$600,000,000 (using the applicable revenues of the Applied Entities for Applied’s 2012 fiscal year and the applicable revenues of the TEL Entities for TEL’s 2012 fiscal year in determining whether the threshold set forth in this sentence is reasonably expected to be exceeded).

Source: Business Combination Agreement between Applied Materials, Inc. and Tokyo Elektron Limited. Filed with the Securities and Exchange Commission on September 24, 2013, on Form 8-k.

rather than investors. Other state and federal agencies cater to constituencies with even narrower interests, such as state agencies regulating the power industry, which seek to minimize rates paid by consumers for energy consumption.

Departments arbitrageurs can get into problems with the various antitrust authorities, most prominently the Federal Trade Commission (FTC) and the Department of Justice (DOJ), as well as industry-specific regulators such as the Federal Communications Commission, the Surface Transportation Board, and the Federal Energy Regulatory Commission.

ANTITRUST ENFORCEMENT

Competition rules have become more of a concern in recent years as a result of globalization, and in particular the ascent of China as an economic heavy-weight. Antitrust concerns are among the most difficult problems for arbitrageurs to make judgments on. The field is highly technical and relies on a thorough understanding of precedent cases where regulators intervened or chose not to intervene. Antitrust regulation is further complicated by the political environment, where enforcement can be weak or strong in different administrations. Moreover, individual transactions can have political overtones, for example, if they risk eliminating jobs in the district of a powerful politician.

United States Anti-Trust Rules

In the United States antitrust laws have their origin in the Sherman Act of 1890, which had two principles:

1. All contracts, combinations and conspiracies that restrain trade are prohibited.
2. Conspiracies to monopolize a particular market are prohibited.

Violation of these provisions are punishable. The Sherman Act was ineffective at first because courts interpreted it very broadly and ruled that it was worded so that all contracts would be barred if it were implemented. In 1914, the government responded to this problem through a new law, the Clayton Act. Initially, the Clayton Act addressed only the acquisition of stock in a corporation if the effect was to reduce competition; asset acquisitions were not covered. The act was amended when the loophole began to be

exploited. The criteria used to determine whether a merger is anticompetitive were defined in Section 7:

No corporation shall acquire the whole or any part of the stock, or the whole or any part of the assets, of another corporation where in any line of commerce in any section of the country the effect of such an acquisition may be to substantially lessen competition or tend to create a monopoly.

Clayton Act, Section 7

Further improvements in the antitrust treatment of mergers were made by the Hart-Scott-Rodino Antitrust Improvements Act of 1976, commonly abbreviated as HSR. It established the principle that mergers must be reviewed in advance by the FTC and the DOJ. Prior to HSR, the government was in the difficult position of having to disapprove mergers after they had been completed already. This led to the logistical nightmare of having to disassemble merged companies, which was difficult and took a long time to litigate. In the meantime, the merged company was benefiting from its anticompetitive behavior. Since HSR, the government no longer *approves* mergers after the fact; instead, it gives *clearance* so that the merger can close.

Under HSR, all mergers above a certain threshold must make a notice filing. The threshold for transaction value increases every year with growth in GDP; it was \$76.3 million for fiscal 2015. A second threshold considers the size of the entities: assets or sales in excess of \$152.5 million. The FTC and DOJ then decide among themselves which agency will review a given transaction. They must make up their mind whether to challenge the transaction in a set period of time. For all-cash offers, the regulators have 15 days to review the filing; in stock-for-stock offers, 30 days. During this waiting period, the transaction cannot close. If the government does not oppose the transaction, it will either grant early termination of the waiting period or let the period expire unchallenged. Early termination notices are posted on the FTC's website.¹ In stock-for-stock transactions, both firms must supply the required information.

If antitrust concerns are raised in the government's review, the merger will be investigated in more detail. In this process, the agency that reviews the merger asks the company to supply it with more documents voluntarily. The government also conducts interviews with customers and competitors to get a better understanding of the products involved. The typical investigation that leads to no subsequent action lasts 57 days.² If this still is not sufficient, the government requests "additional information and documentary material relevant to the proposed acquisition." These are also known as

second requests and are dreaded by arbitrageurs. A second request leads to a widening of deal spreads because the market perceives the risk of a challenge by the government as having increased significantly. Companies can avoid a second request by withdrawing the initial HSR filing and refiling it with additional information. This will reset the waiting period and avoids the bad publicity of a second request. Second requests often are issued in the last week of the HSR waiting period. The government tries to make full use of the allotted time to avoid unnecessary requests.

Antitrust insiders claim that the government benefits in its investigation often from information that is volunteered by competitors or customers of the merging firms as soon as the merger has been announced publicly.

Most second requests proceedings are resolved amicably between the government and the merging companies. In the best-case scenario, the companies will furnish additional information that clarifies the government's concerns. Other second requests can lead to protracted negotiations. The merging firms often come to a settlement with the FTC or DOJ whereby they agree to divest certain divisions of one of the firms prior to closing the transaction. Exhibit 12.2 shows the announcement of the FTC about the intended sale of some of Fidelity National's subsidiaries in Oregon to remediate concerns about competition upon its merger with Lender Processing Services.

A second request always leads to delays in the closing of the merger and increases costs. The FTC typically requests large amounts of data that can amount to millions of pages of documents. The merger cannot be completed until 20 days after both parties have complied with the second request. In the case of a cash merger, that period is shortened to 10 days. The average time period needed to resolve a second request is 157 days.³ Similarly, data from research firm Arb Journal suggest that over the period from 2002–2010 second requests for public company mergers took on average 172 days to be resolved.

Table 12.1 shows the statistics of HSR filings and second requests from 2004 through 2013, as well as enforcement actions. Only in roughly 1.5 percent of HSR filings will the government issue a second request. This figure reflects a large number of filings of smaller mergers that have no competitive implications at all. However, once a second request has been issued, the risk of regulatory action is very high. In roughly two-thirds of all second request cases, the process reaches the point where the government files a lawsuit to block the merger. Once legal action begins, the deal is dead for practical purposes. Resolution of the litigation can take a long time and will be costly. Therefore, the parties to a merger usually terminate the deal once the government challenges it.

EXHIBIT 12.2 ANNOUNCEMENT BY THE FEDERAL TRADE COMMISSION ON FIDELITY NATIONAL DIVESTITURES FOR THE MERGER WITH LENDER PROCESSING SERVICES

FTC Approves Amended Applications by Fidelity National Financial Inc. to Divest Oregon Title Plant Assets

Following a public comment period, the Federal Trade Commission has approved two amended applications by Fidelity National Financial Inc. to sell Oregon real estate title plant assets, as required by the FTC order settling charges that Fidelity's acquisition of Lender Processing Services, Inc. (LPS) was likely to harm competition.

On April 24, 2014, Fidelity filed an application seeking approval to divest title plants in six Oregon counties to AmeriTitle, Inc. and a second application seeking approval to divest its interest in the Portland title plant to Old Republic Title Company of Oregon to comply with the FTC's order.

In May, Fidelity filed amended applications seeking approval to divest title plants in five Oregon counties to AmeriTitle, excluding the title plant in Polk County; and a second amended application seeking approval to divest the Polk County title plant and the interest in the Portland title plant to Old Republic.

The Commission vote approving both amended divestiture applications was 4-1, with Commissioner Joshua D. Wright voting no. The agency responded to two public comments received regarding the applications. (FTC File No. 131-0159, Docket No. C-4425; the staff contact is Naomi Licker, Bureau of Competition, 202-326-2851)

Source: Press release by the Federal Trade Commission, July 25, 2014.

Litigation brought by the DOJ is heard in federal court. The DOJ will seek a judgment to enjoin the merger. In contrast, litigation brought by the FTC is initially heard by an administrative law judge. The decision of the administrative law judge is then reviewed by the FTC commissioners and can be appealed in federal court. The FTC's ruling comes in the form of a cease-and-desist order rather than an injunction.

TABLE 12.1 HSR Transactions, Second Requests, and Merger Enforcement Actions from 2004 to 2013

Fiscal Year	HSR Transactions	Second Requests	Total Enforcement Actions		Requests for Early Termination	
			HSR Premerger Violation		Received	Granted
2004	1,428	35	15	1	1,241	943
2005	1,675	50	14	1	1,382	997
2006	1,768	45	16	0	1,468	1,098
2007	2,201	63	22	1	1,840	1,402
2008	1,726	41	21	1	1,385	1,021
2009	716	31	19	2	575	396
2010	1,166	42	22	0	953	704
2011	1,450	55	18+	0	1,157	888
2012	1,429	49	25	2	1,094	902
2013*	1,326	47	23	2	990	797

*Fiscal year 2013 covers the period of October 1, 2012 through September 30, 2013
Sources: Federal Trade Commission, Department of Justice, “Hart-Scott-Rodino Annual Report. Fiscal Year 2013.” May 2014; Federal Trade Commission, “Competition Enforcement Database”

The overriding principle is the question of market power and concentration. The first analysis is whether a merger increases concentration in the relevant market. A market is defined as

a product or group of products and a geographic area in which it is produced or sold such that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future producer or seller of those products in that area likely would impose at least a “small but significant and nontransitory” increase in price, assuming the terms of sale of all other products are held constant. A relevant market is a group of products and a geographic area that is no bigger than necessary to satisfy this test.

Horizontal Merger Guidelines, U.S. Department of Justice and the Federal Trade Commission

This definition of a market is very vague, and regulators have a history of shifting definitions in unpredictable ways. The relevant market two dimensions: geographic and product reach. *Product reach* is defined by potential

substitutes that consumer might use when faced with a price increase. The analysis will try to determine whether there is a group of products for which a monopolist can impose a nontransitory price increase. Consumers' price elasticity is the economic variable that is evaluated here. If consumers' demand is inelastic for a 5 percent increase in the price of the products of both merging firms, then there are potential adverse competitive effects in the product market. The geographic reach is determined analogously: What is the smallest region in which a price increase would not be transitory?

Once a market has been found, the concentration in that market is calculated through the Herfindahl-Hirschman Index (HHI). The HHI is the sum of the square of the percentage market share of each firm:

$$HHI = \sum_{i=1}^N s_i^2 \quad (12.1)$$

where

N is the total number of firms in the market.

s_i is the market share of firm i .

The HHI ranges from zero to 10,000, where the maximum of 10,000 is reached when one single firm has a market share of 100 percent. For a hypothetical market with perfect competition of an infinite number of firms each with infinitesimal market share, the HHI will approach zero. The higher the value of the index, the more concentrated the market is. Regulators will consider the anticipated HHI after the closing of the merger. Three threshold levels are relevant for government action:

1. *HHI below 1,000 after the merger.* There is no concentration.
2. *HHI between 1,000 and 1,800 after the merger.* The market is moderately concentrated. If the merger leads to an increase of more than 100 points in the HHI, there is a risk that it may be anticompetitive. An increase of less than 100 points is not considered to have competitive consequences. This allows for the merger of smaller participants.
3. *HHI above 1,800 after the merger.* The market is considered highly concentrated. Nevertheless, if the increase due to the HHI is less than 50, the merger is unlikely to have an anticompetitive impact. Such a small increase occurs when smaller market participants merge.

To put these levels into context, an HHI of 1,000 represents a market of 10 firms each having a 10 percent market share. An HHI of 1,800 corresponds to a market of 5 firms each with 18 percent market share, plus a large number of smaller firms with an aggregate market share of 10 percent.

Table 12.2 shows the government's investigation of mergers as a function of the change in the HHI and the level of the HHI in the industry following the merger. It can be seen that for mergers in highly concentrated industries, there are few closed cases, and the vast majority ends in enforcement. In contrast, for industries with a low HHI after the merger, the ratio of investigations that are closed without action relative to the ones that are enforced is much more balanced.

Since 1984, the index levels are no longer adhered to mechanically but have become flexible guidelines. Qualitative factors are also taken into account now—notably, changes in market conditions and the degree of differentiation of products.

When analyzing the banking industry, where consolidation of banks on the local and regional level is common, a helpful tool is available to arbitrageurs that also serves to illustrate the workings of the HHI. The Federal Reserve Bank of St. Louis maintains a database of market shares of banks in regional markets named CASSIDI. It is accessible to the public and can be a useful tool in examining bank mergers. The data are based on Federal Deposit Insurance Corporation (FDIC) filings by banks and is usually 12 to 18 months old, so that any conclusions drawn should be taken with a grain of salt. The \$5.1 billion merger between Hudson City Bancorp and M&T Bank is a good example of how the HHI and the CASSIDI tool work. An arbitrageur can use the CASSIDI system to calculate the HHI in different markets in which the merging banks operate. CASSIDI identifies only two overlapping banking markets for the two firms, one being the Metro New York City area, the other Philadelphia. Each of these markets is analyzed individually. For example, in the market of Metropolitan New York, the total HHI is 1,437 prior to the merger and is projected to decline by 25 points after the merger, whereas that of Philadelphia has a HHI of 1,028 pre-merger and would decline by only 5 points. CASSIDI's calculation for Metropolitan New York is reproduced in Table 12.3.

Following the merger of the two institutions, the HHI in this market increased by only two points to 1,374, as seen in Table 12.4. Therefore, no competitive threat exists and the banks are unlikely to have to dispose of any branches, much less see their entire merger threatened.

Over time, other factors have been added to the evaluation of anticompetitive effects of mergers. Today, the DOJ will also consider the possibility of entry of new competitors, any efficiency gains from the combination that would offset any anticompetitive effects, and take the potential exit of one of the merger parties into account in the event that the merger were not to occur.

The enforcement of antitrust risk by the government is highly variable and depends on the current political situation as well as the individuals in

TABLE 12.2 FTC Horizontal Merger Investigations: Post-Merger HHI and Change in HHI (Delta), FY 1996–FY 2011
(Enforced/Closed)

	Change in HHI (Delta)								
	0–99	100–199	200–299	300–499	500–799	800–1,199	1,200–2,499	2,500 +	TOTAL
0–1,799	0/14	17/31	19/20	17/11	3/7	0/1	0/0	0/0	56/84
1,800–1,999	0/4	5/4	5/6	12/4	12/5	0/0	0/0	0/0	34/23
2,000–2,399	1/2	1/6	7/8	25/19	32/12	2/2	0/0	0/0	68/49
2,400–2,999	1/2	4/2	6/5	18/6	44/14	26/10	0/0	0/0	99/39
3,000–3,999	1/3	3/2	5/2	9/5	25/14	71/21	39/14	0/0	153/61
4,000–4,999	0/0	2/2	1/1	5/1	10/4	18/4	68/3	0/0	104/15
5,000–6,999	1/0	6/0	8/2	8/1	19/0	21/2	145/20	47/5	255/30
7,000 +	0/0	0/0	1/0	1/0	3/0	9/0	26/1	246/2	286/3
TOTAL	4/25	38/47	52/44	95/47	148/56	147/40	278/38	293/7	1,055/304

Source: Federal Trade Commission, Horizontal Merger Investigation Data, Fiscal Years 1996–2011, issued in January 2013.

TABLE 12.3 Banking Market in Metropolitan New York, as Seen by the St. Louis Fed's CASSIDI System (top 20)

Branch Type Count		Entity Name	City	State	Unweighted			Weighted †		
					Deposits**	Rank	Market Share	Deposits	Rank	Market Share
BHC	1032	JPMORGAN CHASE & CO.	NEW YORK	NY	441,139.879	1	33.43	441,139.879	1	34.5
BANK	1032	JPMORGAN CHASE BANK, NATIONAL ASSOCIATION	COLUMBUS	OH	441,139.879					
BHC	6	BANK OF NEW YORK MELLON CORPORATION, THE	NEW YORK	NY	107,570.555	2	8.15	107,570.555	2	8.41
BANK	6	BANK OF NEW YORK MELLON, THE	NEW YORK	NY	107,570.555					
BHC	547	BANK OF AMERICA CORPORATION	CHARLOTTE	NC	103,963.228	3	7.88	103,963.228	3	8.13
BANK	547	BANK OF AMERICA, NATIONAL ASSOCIATION	CHARLOTTE	NC	103,963.228					
BHC	315	CITIGROUP INC.	NEW YORK	NY	80,944.051	4	6.13	80,944.051	4	6.33
BANK	315	CITIBANK, NATIONAL ASSOCIATION	SIOUX FALLS	SD	80,944.051					
BHC	168	HSBC HOLDINGS PLC	LONDON		62,827.527	5	4.76	62,827.527	5	4.91
BANK	168	HSBC BANK USA, NATIONAL ASSOCIATION	MCLEAN	VA	62,827.527					

(continued)

TABLE 12.3 (Continued)

Type	Branch Count	Entity Name	City	State	Unweighted			Weighted [†]		
					Deposits**	Rank	Market Share	Deposits	Rank	Market Share
BHC	396	WELLS FARGO & COMPANY	SAN FRANCISCO	CA	53,256.031	6	4.04	53,256.031	6	4.16
BANK	396	WELLS FARGO BANK, NATIONAL ASSOCIATION	SIOUX FALLS	SD	53,256.031					
BHC	430	TORONTO-DOMINION BANK, THE	TORONTO		48,607.382	7	3.68	48,607.382	7	3.8
BANK	430	TD BANK, NATIONAL ASSOCIATION	WILMINGTON	DE	48,607.382					
BHC	327	CAPITAL ONE FINANCIAL CORPORATION	MCLEAN	VA	47,528.338	8	3.60	47,528.338	8	3.72
BANK	327	CAPITAL ONE, NATIONAL ASSOCIATION	MCLEAN	VA	47,528.338					
BHC	4	DEUTSCHE BANK AKTIENGE- SELLSCHAFT	FRANKFURT		30,264.172	9	2.29	30,264.172	9	2.37
BANK	4	DEUTSCHE BANK TRUST COMPANY AMERICAS	NEW YORK	NY	30,264.172					

BHC	287	PNC FINANCIAL SERVICES GROUP, INC., THE	PITTSBURGH	PA	19,955,380	11	1.51	19,955,380	10	1.56
BANK	287	PNC BANK, NATIONAL ASSOCIATION	WILMINGTON	DE	19,955,380					
BHC	211	NEW YORK COMMUNITY BANCORP, INC.	WESTBURY	NY	19,501,345	12	1.48	19,501,345	11	1.52
BANK	35	NEW YORK COMMERCIAL BANK	WESTBURY	NY	2,341,025					
THRIFT	176	NEW YORK COMMUNITY BANK	WESTBURY	NY	17,160,320					
BHC	211	BANCO SANTANDER, S.A.	BOADILLA DEL MONTE MADRID		17,286,567	13	1.31	17,286,567	12	1.35
BANK	211	SANTANDER BANK, NATIONAL ASSOCIATION	WILMINGTON	DE	17,286,567					
BANK	27	SIGNATURE BANK	NEW YORK	NY	15,274,884	14	1.16	15,274,884	13	1.19
BHC	1	MORGAN STANLEY	NEW YORK	NY	13,743,867	15	1.04	13,743,867	14	1.07
BANK	1	MORGAN STANLEY PRIVATE BANK, NATIONAL ASSOCIATION	PURCHASE	NY	13,743,867					
BHC	214	VALLEY NATIONAL BANCORP	WAYNE	NJ	11,289,215	16	0.86	11,289,215	15	0.88
BANK	214	VALLEY NATIONAL BANK	WAYNE	NJ	11,289,215					

(continued)

TABLE 12.3 (Continued)

Type	Branch Count	Entity Name	City	State	Unweighted			Weighted †		
					Deposits**	Rank	Market Share	Deposits	Rank	Market Share
BANK	1	BANK OF CHINA	NEW YORK	NY	10,941.289	17	0.83	10,941.289	16	0.86
BHC	77	APPLE FINANCIAL HOLDINGS, INC.	NEW YORK	NY	10,899.003	18	0.83	10,899.003	17	0.85
THRIFT	77	APPLE BANK FOR SAVINGS	MANHASSET	NY	10,899.003					
THC	129	HUDSON CITY BANCORP, INC.	PARAMUS	NJ	21,797.537	10	1.65	10,898.769	18	0.85
THRIFT	129	HUDSON CITY SAVINGS BANK	PARAMUS	NJ	21,797.537					
BHC	118	NEW INVESTORS BANCORP, INC.	SHORT HILLS	NJ	9,693.047	20	0.73	9,693.047	19	0.76
THRIFT	118	INVESTORS BANK	SHORT HILLS	NJ	9,693.047					

† Deposits of thrift institutions are weighted at 50 percent, unless otherwise noted. Deposits of thrift subsidiaries of commercial banking organizations, however, are weighted at 100 percent.

**Deposit data (in millions of dollars) are as of June 30, 2013, and reflect currently known ownership structure.

Source: Adapted from Federal Reserve Bank of St. Louis, CASSID™: Competitive Analysis and Structure Source Instrument for Depository Institutions. Run on September 21, 2014.

TABLE 12.4 Effect of the Wells Fargo/Wachovia Merger in the Metropolitan New York Market on Competition

Branches	Name	City	State	Postmerger			
				Unweighted		Weighted*	
				Deposits**	Rank %	Deposits**	Rank %
202	M&T Bank Corporation	Buffalo	NY	28,154,849	10	28,154,849	10
4	Wilmington Trust, NA	Wilmington	DE	0		0	2.18
69	Manufacturers and Traders Trust	Buffalo	NY	6,357.312		6,357.312	
129	Hudson City Savings Bank	Paramus	NJ	21,797.537		21,797.537	

*Deposits of thrift institutions are weighted at 50 percent, unless otherwise noted. Deposits of thrift subsidiaries of commercial banking organizations, however, are weighted at 100 percent.

		Premerger	Postmerger
Total Organizations:		247	246
Total Banking Organizations:		178	178
Total Thrift Organizations:		69	68
Herfindahl-Hirschman Index			
	Premerger	Postmerger	Change in HHI
HHI Unweighted Deposits	1372	1374	2
HHI Weighted Deposits	1458	1437	-21

Note: This transaction exceeds established merger guidelines, suggesting that it could have an adverse effect on competition in this banking market. Please contact the Buyer's primary federal banking regulator for more information.

Source: Adapted from Federal Reserve Bank of St. Louis, CASSIDITM; Competitive Analysis and Structure Source Instrument for Depository Institutions. Run on September 21, 2014.

charge of the DOJ and FTC. The effect of the addition of more and more factors to the analysis of anticompetitive effects of mergers probably has contributed also to the decreasing government antitrust activity this decade.

It is unclear whether regulators are preparing to become more aggressive. In 2007, the FTC failed to obtain a preliminary injunction to block the acquisition of Wild Oats by Whole Foods. Normally, regulators will stop litigating when courts refuse to grant preliminary injunctions, if only because a victory after the merger has concluded makes an unwinding of the combined entity difficult. In the Wild Oats/Whole Foods merger, however, the FTC continued to litigate and won an appeal in the middle of 2008. During the first quarter of 2009, the merged Whole Foods settled the litigation with the government by agreeing to sell 32 stores, mostly in Arizona and Colorado. The significance of this settlement lies in the breakup of a firm that had merged already. Such drastic measures had not been taken in decades and could be the harbinger of a new, more stringent, approach to the implementation of anti-trust laws.

International Anti-Competition Merger Regulation

The analysis of antitrust risk is complicated even more by the increasingly global nature of large corporations. As a result, antitrust concerns arise no longer just from U.S. regulators in U.S. mergers, but more frequently from foreign regulators when two U.S. firms have dominant market share in these foreign markets. One of the largest transactions to stumble over foreign antitrust enforcement was the aborted \$115 billion merger of Sprint and MCI WorldCom in 2000. The European Commission (EC), which enforces antitrust laws in the European Union, blocked the transaction. Similarly, in 2001 the \$40 billion of GE and Honeywell was blocked by the EC even though it had already been okayed by U.S. regulators.⁴

International antitrust issues can arise in transactions that look solid from a U.S. perspective. As companies become increasingly global, arbitrageurs will run into international antitrust issues more frequently. Antitrust enforcement is a risk not only in the major economies of the world; it also can become a problem if the merging U.S. companies happen to have a dominant position among each other in smaller markets abroad. The author was once invested in a transaction that suddenly was held up in a country in South America where the firm had a dominant position, even though this export market was a small fraction of the firm's overall sales. As globalization progresses, even supposedly domestic deals will increasingly have international implications.

In the European Union, merger control is exercised by the European Commission's Directorate-General for Competition in Brussels in the executive branch of the Union. While the ultimate decision to enjoin a merger

rests with the competition commissioner, day-to-day enforcement for mergers is performed by a deputy director general with special responsibility for mergers, who reports to the deputy director general for antitrust, who in turn reports to the director general for competition.

Mergers and acquisitions that would significantly reduce competition in the single European market are prohibited. The applicable regulation is Council Regulation (EC) No 139/2004. However, the Commission is only responsible for mergers that meet certain thresholds. These EU thresholds are

First Threshold:

1. The parties achieve a combined worldwide turnover of more than €5 billion; and
2. At least two parties achieve a turnover of more than €250 million in the EU;

or

Second Threshold:

1. The parties' combined worldwide turnover exceeds €2.5 billion; and
2. In each of three Member States the parties' combined turnover exceeds €100 million; and
3. In each of the same three Member States the turnover of each of the parties exceeds €25 million; and
4. The EU turnover of each of the parties exceeds €100 million.

If the Commission is in charge, then national authorities cannot impose their own review. Mergers below the EU threshold fall under the responsibility of national competition authorities, each of which has its own set of rules.

When these thresholds are met companies seeking to merge have to notify the Commission of their plans. Once the notification has been filed the Commission has 25 working days to review the transaction. This is known as a Phase I review. If there are competition concerns the companies can offer remedies at this stage, which will extend the review period by 10 working days.

If a merger is not cleared during Phase I then a Phase II investigation is launched. These are more extensive analyses of competition effects that takes 90 working days. Extension are possible if parties offer remedies after the 55th working day (by 15 working days) or if the parties agree to an extension (by 20 working days). If all of the extensions are added up and an allowance for weekends and holidays is made, then six calendar months are a good estimate for the maximum length of a Phase II review. The typical

TABLE 12.5 Notification Thresholds in Select European Countries

Country	Criteria
Austria	Combined turnover €300m worldwide and €30m in Austria
France	Combined turnover €150m worldwide and two parties each €50m turnover in France
Germany	Combined turnover €500m worldwide and one party has €25m turnover in Germany
Ireland	Combined turnover €50m in Ireland
Italy	Combined turnover €482m in Italy or target has €48m turnover in Italy (inflation adjusted annually; as of March 2014)
Netherlands	Combined turnover €150m worldwide and each of two parties has €30m turnover in the Netherlands
Spain	Combined turnover €240m worldwide and each of two parties has €60m turnover in the Spain; or: combined market share in Spain to exceed 30 percent
United Kingdom	Target turnover £70m in United Kingdom Combined market share to exceed 25 percent in any category

timeframe for a Phase II review is between 5 and 7 months, which is of similar order of magnitude as a second request in the United States.

It can be seen from this brief description that the analysis of antitrust risk in mergers is extremely technical and specialized. Some arbitrageurs specialize in transactions that have antitrust risk and profit from their ability to analyze challenges better than the market on average. Other arbitrageurs hire lawyers who specialize in antitrust law to help analyze antitrust risk. If an arbitrageur does not have a good understanding of the risk or access to superior legal advice, it is best to stay away from mergers that have antitrust risk.

Table 12.5 gives an overview of the thresholds at which various countries require notification of proposed merger to the local competition authorities. This information can help arbitrageurs identify in which countries competition problems might arise for a given merger.

TAX POLICY

At the time of writing, the focus of many policy makers around the world is shifting toward perceived inequities in corporate taxation. At the same time, company managers in many high-tax jurisdictions see tax expenses as one of their highest costs. This has led many companies to seek to move their tax residence to jurisdictions with lower levels of taxation. One method to redomicile is to merge with a company that is located in such a jurisdiction.

In practice, it is rare for cross-border mergers to be driven entirely by tax considerations. Strategic considerations always play a significant role in the decision to redomicile through a merger transaction. Similarly, tax considerations are also always taken into account. It is merely a question of degree whether a merger has a stronger or weaker tax component.

A merger in which a large firm in a high tax jurisdiction merges with a smaller firm in a lower tax jurisdiction and thereby changes its tax residence to the lower tax country is referred to as a tax inversion. These transactions work particularly well between targets in the United States, which has one of the highest statutory tax rates in the developed world, and acquirers in developed European jurisdictions with a low tax rate, such as the United Kingdom, Ireland, or Switzerland. Even though statutory tax rates in the United States are among the highest in the world, its effective tax rates are in line with those of other developed nations, since numerous exemptions allow firms to shield income from taxation or defer taxes. One such tax deferral applies to operating earnings from non-U.S. subsidiaries, which are not taxable until they are repatriated to the United States. Originally, this rule had been designed to encourage exports but has since taken on a life of its own. Companies with global operations have amassed large cash hoardes outside of the United States and can be tempted to access these funds through a tax inversion. However, in most cases, even more attractive than access to offshore cash is the reduced tax rate on future income that can be achieved through tax inversions. Hence, tax inversions make sense only for companies that have high earnings outside of the United States.

Invariably, the increase in tax-driven expatriations by many large enterprises has led to a political backlash and calls to halt tax inversions through legislative action. But the nature of these transactions makes it very difficult to distinguish between a tax inversion and a traditional cross-border acquisition of a U.S. firm by a foreign company. Therefore, it is unlikely that tax inversions will be stopped by means other than a comprehensive tax reform. The fundamental problem that makes tax inversions possible is the incompatibility of tax regimes in Europe and the United States. Although Europe has a territorial tax philosophy the United States operates a system of worldwide taxation.

A tax inversion can add value to a company but can at the same time have adverse tax effects on its U.S. investors if they, collectively, own more than 50 percent of the combined entity post-inversion. In that case, capital gains taxes are due. This rule took effect in 1997, and was designed to dampen tax inversion activity. It clearly failed to achieve this goal.

As government finances in developed countries get more and more distressed, it is likely that future government action will seek to extract taxes from mergers and acquisition activities. Cross-border mergers are

particularly at risk. For example, in the year 2012, the government of India proposed to introduce a retroactive tax on any merger that had occurred anywhere in the world after the year 1962 if it involved the transfer of an asset in India. This was in reaction to a ruling of its Supreme Court that Vodafone did not owe the equivalent of \$2 billion of taxes on its acquisition of an Indian telecommunication company from Hong Kong's Hutchinson Whampoa in the year 2007 because this asset was actually held in a European holding company, which was the subject of the merger transaction, whereas the Indian subsidiary did not change owners. It can be seen easily how surprise drastic tax measures such as the Indian proposal can impact cross-border mergers and cause losses to arbitrageurs.

SECURITIES REGULATORS

The role of securities regulators is generally less of a threat for the completion of a merger than that of other agencies. This may appear counterintuitive at first, since they are most directly involved with regulating securities transactions. But their mandate is not to stop mergers from taking place, it is only to regulate the way in which merger activity is conducted. Only in extreme scenarios will securities regulators block a transaction, such as when parties to a merger have blatantly disregarded important regulations. This contrasts with the mandate of other regulators who oversee specific industries (telecommunications, media, utilities) or antitrust regulators, who are charged with identifying specific situations in which mergers cannot take place.

In this spirit, the Securities and Exchange Commission in the United States takes a relatively passive approach to the regulation of mergers and buyouts. It follows the main tenet of securities laws when companies merge: disclosure. Unlike other regulatory agencies, the SEC does not evaluate the merit or fairness of a merger. Even grossly unfair mergers can pass SEC muster as long as their unfairness is disclosed properly. The review of the quality of disclosure trumps a pronouncement as to its merit. This line of regulation is comparable to other SEC mandates, such as the issuance of securities, where the SEC simply reviews the adequacy of disclosures. Many functions taken on in other jurisdictions by securities regulators fall in the United States under the responsibilities of the States, which reduces the role of the SEC even more compared to that of other countries' securities overseers.

In other countries, securities regulators are more directly involved in merger and acquisition approvals. For example, minimum price rules or timing requirements are overseen in many European countries by securities regulators. In the United States the aspects are handled in State courts, whereas in the United Kingdom they fall under the purview of the Takeover Panel.

STATE AND PROVINCIAL GOVERNMENTS

In many countries, provinces and states play an important role in corporate law and can, to varying degrees, influence the outcome of mergers. In Switzerland, for example, companies incorporate in a specific Canton, which determines their level of taxation. The M&A process, however, is governed by Swiss federal law. The two countries in which states and provinces have the most influence over M&A are the United States and Canada.

United States

In the United States, companies incorporate under state laws and also liquidate or merge according to procedures prescribed by the states. A merger itself is a relatively simple activity in most states: It is sufficient for an authorized company official to file a certificate of merger with the relevant state body. In Delaware, this is the secretary of state's Division of Corporations.

During the merger wave of the 1980s, companies managed to convince their local state governments to implement anti-takeover legislation. States became protectors of entrenched management that sought to fight off hostile takeovers. This put state governments in direct conflict with the SEC, which casts itself as an investor advocate and maintains that state anti-takeover provisions are an infringement to interstate commerce.

The devil lies in the details leading up to the merger. State laws offer companies many takeover defenses to fend off potential suitors and thwart merger attempts. These defenses have been described in detail in Chapter 8.

Unfortunately, state politicians occasionally are tempted to flex muscles when a local company wants to fend off a hostile acquirer. One of the most notorious cases was the battle for shopping mall owner Taubman Centers, Inc., between a group of Taubman family members and Simon Properties Group, another commercial real estate firm. Australian mall operator Westfield America Trust joined Simon in its attempt to acquire Taubman. In late 2002, Simon Properties and Westfield offered to acquire Taubman for \$17.50 per share, a premium to the \$14.80 closing price before the announcement. Taubman had an entrenched family that controlled the firm through Series B shares as well as through a voting agreement between the family members and their friends that gave them control over 33.6 percent of the shares. The Series B shares had been issued years earlier when the GM pension fund wanted to swap its interests in some of Taubman's properties into shares of the firm.

Simon first increased its bid to \$18, and later, in January 2003, to \$20 per share, a 25 percent premium to its trading price before the offer. Of the outside shareholders, 85 percent accepted Simon Properties' \$20 bid. When the Taubman family refused to sell, Simon sued in Michigan state

court to have the voting agreement voided under that state's control share acquisition act. This in itself is rather unusual: A hostile buyer is normally the victim of a control share act and does not seek to benefit from it. During the litigation, it was discovered that the true reason for the issuance of the Series B shares had been to thwart an attempted takeover by another firm, Rouse Company. This takeover proposal had never been revealed to shareholders.

The court sided with Simon and prevented the Taubman family from voting its shares. However, the battle for Taubman then shifted from the court system to the state legislature of Michigan. Taubman lobbied Michigan's lawmakers to pass a law that would make it legal for groups of shareholders to vote their shares together without triggering the provisions of the Michigan control shares act. After intense lobbying, the Michigan senate passed the law in a vote of 24 to 14 in September 2004.

The day after Michigan's governor signed the law, Simon Properties withdrew its acquisition proposal.

It is very difficult for arbitrageurs to estimate the probability of success of a lobbying campaign on the state level. It is safe to assume that state politicians will bow to the demands of local companies rather than help out of state acquirers. However, the intensity of a local defense hardly ever reaches the levels seen in the Taubman case. In the acquisition of Anheuser-Busch by InBev, Missouri governor Matt Blunt opposed the deal publicly and even directed the Missouri Department of Economic Development to see if there was a way to stop it. Despite the high profile of Anheuser-Busch, the transaction was completed because, ultimately, the willingness of the target firm to be acquired trumped the political machinations.

U.S. states also have antitrust laws. They are rarely a problem because federal antitrust regulations trump those of states. Other state laws, however, can conflict with federal antitrust regulations. Highly regulated industries, such as utilities or telecommunications, often are mandated by state law to operate in ways that are considered anticompetitive under federal antitrust laws. Fortunately, lawyers have created a state action doctrine, which gives these firms immunity from federal antitrust laws.

Takeovers of utilities often fail because of opposition by state agencies charged with regulating the industry. The bodies often have wide-ranging powers and will block mergers if there is a risk, often more perceived than real, that rates for the state's residents will increase if a merger passes.

Banking and insurance mergers can take a long time to complete because state banking or insurance regulators have to approve the transaction in each state where the banks or insurance companies are active.

One of the more extreme cases of interference of such a state agency with a merger was the acquisition of Unisource Energy by private equity firm KKR in 2003. The Arizona Corporation Commission refused to approve the transaction. KKR made a number of proposals to mitigate the concern of the commissioners that rates would have to be raised in order to repay the debt accumulated in the buyout. KKR proposed to “ring fence” customers of the utility by issuing the debt separately through the holding company rather than through the utility. KKR also promised to keep the headquarters and management in Arizona. Nevertheless, the Arizona Corporation Commission refused to approve the transaction. It has been reported anecdotally that the major point of contention was KKR’s unwillingness to reveal details of its calculation of the internal rate of return that it expected to make on the transaction. Fortunately for shareholders, the price of Unisource increased after the transaction had collapsed (see Figure 4.1).

It should be noted that the increase in the price only shows that KKR was underpaying for Unisource. The true value of the firm became apparent to the market only due to KKR’s proposal.

Some of the most wide-ranging powers to interfere with businesses are available to state gaming regulators. Exhibit 12.3 shows the disclosure in the proxy statement of Wynn Resorts. The exhibit describes the power that Nevada Gaming Authorities have over casino companies. These powers include the forced sale of stock if a shareholder is deemed not acceptable.

For arbitrageurs, there is a real risk that a buyer is not acceptable to a gaming commission. For example, New Jersey withdrew the license of the Tropicana Casino shortly after its acquisition of Aztar Inc. had been completed. New Jersey justified its decision with Tropicana’s failure to maintain a first-class casino. Fortunately for arbitrageurs, the transaction had closed already. Bond investors, however, took losses when Tropicana had to file for bankruptcy following the loss of its license. In hindsight, the harsh action of the regulator looks foolish as the New Jersey casino industry since has been decimated by competition from newly opened gaming facilities in neighboring Pennsylvania. It has also been rumored that Stanley Ho, one of Macao’s gaming magnates, has been denied entry into U.S. gaming markets by state regulators over suitability concerns (see Exhibit 12.3 for an example of suitability disputes).

Canadian Provinces

In Canada, provincial governments have a similar role in corporate law as those in the United States. Some provinces take a more aggressive stance against mergers than others, for no apparent reason other than

EXHIBIT 12.3 WYNN RESORTS' DESCRIPTION OF NEVADA GAMING REGULATION AND REDEMPTION OR MANDATORY SALE OF SECURITIES OWNED BY AN UNSUITABLE PERSON

Nevada

Introduction. The ownership and operation of casino gaming facilities in the State of Nevada are subject to the Nevada Gaming Control Act and the regulations made under the Act, as well as to various local ordinances. Our Las Vegas Operations are subject to the licensing and regulatory control of the Nevada Gaming Commission, the Nevada State Gaming Control Board and the Clark County Liquor and Gaming Licensing Board, which we refer to herein collectively as the "Nevada Gaming Authorities."

[...]

Individual Licensing Requirements. No person may become a more than 5% stockholder or member of, or receive any percentage of the profits of, an intermediary company or company licensee without first obtaining licenses and approvals from the Nevada Gaming Authorities. [...]

Redemption of Securities Owned By an Unsuitable Person. The Company's articles of incorporation provide that, to the extent required by the gaming authority making the determination of unsuitability or to the extent the Board of Directors determines, in its sole discretion, that a person is likely to jeopardize the Company's or any affiliate's application for, receipt of, approval for, right to the use of, or entitlement to, any gaming license, shares of Wynn Resorts' capital stock that are owned or controlled by an unsuitable person or its affiliates are subject to redemption by Wynn Resorts. The redemption price will be the amount, if any, required by the gaming authority or, if the gaming authority does not determine the price, the sum deemed by the Board of Directors to be the fair value of the securities to be redeemed. If Wynn Resorts determines the redemption price, the redemption price will be capped at the closing price of the shares on the principal national securities exchange on which the shares are listed on the trading day before the redemption notice is given. If the shares are not listed on a national securities exchange, the redemption price will be capped at the closing sale price of the shares as quoted

on The NASDAQ Global Select Market or if the closing price is not reported, the mean between the bid and ask prices, as quoted by any other generally recognized reporting system. Wynn Resorts' right of redemption is not exclusive of any other rights that it may have or later acquire under any agreement, its bylaws or otherwise. The redemption price may be paid in cash, by promissory note, or both, as required, and pursuant to the terms established by, the applicable Gaming Authority and, if not, as the Board of Directors of Wynn Resorts elects, and as set forth in the Company's articles of incorporation.

On February 18, 2012, Wynn Resorts' Gaming Compliance Committee concluded an investigation after receiving an independent report by Freeh, Sporkin & Sullivan, LLP (the "Freeh Report") detailing a pattern of misconduct by Aruze USA, Inc. (at the time a stockholder of Wynn Resorts), Universal Entertainment Corporation, Aruze USA, Inc.'s parent company, and Kazuo Okada, (the majority shareholder of Universal Entertainment Corporation and a former member of the Board of Directors of Wynn Resorts and Wynn Macau, Limited) (collectively, the "Okada Parties")

Based on the Freeh Report, the Board of Directors of Wynn Resorts determined that the Okada Parties are "unsuitable persons" under Article VII of the Company's articles of incorporation. The Board of Directors was unanimous (other than Mr. Okada) in its determination. After authorizing the redemption of the Aruze shares, the Board of Directors took certain actions to protect the Company and its operations from any influence of an unsuitable person, including placing limitations on the provision of certain operating information to unsuitable persons and formation of an Executive Committee of the Board to manage the business and affairs of the Company during the period between each annual meeting. The Charter of the Executive Committee provides that "Unsuitable Persons" are not permitted to serve on the Committee. All members of the Board, other than Mr. Okada, were appointed to the Executive Committee on February 18, 2012. The Board of Directors also requested that Mr. Okada resign as a director of Wynn Resorts (under Nevada corporation law, a board of directors does not have the power to remove a director) and recommended that Mr. Okada be removed as a member of the Board of Directors of Wynn Macau, Limited. In addition, on February 18, 2012, Mr. Okada was removed from the Board of Directors of Wynn Las Vegas Capital Corp., an indirect wholly owned subsidiary of Wynn Resorts. On February 24, 2012, Mr. Okada was removed from the

Board of Directors of Wynn Macau, Limited and on February 22, 2013, he was removed from the Board of Directors of Wynn Resorts by a stockholder vote in which 99.6% of the over 86 million shares voted were cast in favor of removal. Additionally, Mr. Okada resigned from the Board of Directors of Wynn Resorts on February 21, 2013. Although the Company has retained the structure of the Executive Committee, the Board has resumed its past role in managing the business and affairs of the Company.

Based on the Board of Directors' finding of "unsuitability," on February 18, 2012, Wynn Resorts redeemed and cancelled Aruze USA, Inc.'s 24,549,222 shares of Wynn Resorts' common stock. The Company engaged an independent financial advisor to assist in the fair value calculation and concluded that a discount to the then current trading price was appropriate because of, among other things, restrictions on most of the shares held by Aruze USA, Inc. under the terms of the Stockholders Agreement (as defined below). Pursuant to its articles of incorporation, Wynn Resorts issued the Redemption Price Promissory Note (the "Redemption Note") to Aruze USA, Inc. in redemption of the shares. The Redemption Note has a principal amount of \$1.94 billion, matures on February 18, 2022 and bears interest at the rate of 2% per annum, payable annually in arrears on each anniversary of the date of the Redemption Note. The Company may, in its sole and absolute discretion, at any time and from time to time, and without penalty or premium, prepay the whole or any portion of the principal or interest due under the Redemption Note. In no instance shall any payment obligation under the Redemption Note be accelerated except in the sole and absolute discretion of Wynn Resorts or as specifically mandated by law. The indebtedness evidenced by the Redemption Note is and shall be subordinated in right of payment, to the extent and in the manner provided in the Redemption Note, to the prior payment in full of all existing and future obligations of Wynn Resorts or any of its affiliates in respect of indebtedness for borrowed money of any kind or nature.

The Okada Parties have challenged the redemption of Aruze USA, Inc.'s shares and the Company is currently involved in litigation with those parties as well as related shareholder derivative litigation. [...] The outcome of these various proceedings cannot be predicted. The Company's claims and the Okada Parties' counterclaims are in a preliminary stage and management has determined that based on proceedings to date, it is currently unable to determine the probability

of the outcome of this matter or the range of reasonably possible loss, if any. An adverse judgment or settlement involving payment of a material amount could cause a material adverse effect on our financial condition.

Consequences of Violating Gaming Laws. If the Nevada Gaming Commission determines that we have violated the Nevada Gaming Control Act or any of its regulations, it could limit, condition, suspend or revoke our registrations and gaming license. [...]

Requirements for Voting or Nonvoting Securities Holders. Regardless of the number of shares held, any beneficial owner of Wynn Resorts' voting or nonvoting securities may be required to file an application, be investigated and have that person's suitability as a beneficial owner of voting securities determined if the Nevada Gaming Commission has reason to believe that the ownership would be inconsistent with the declared policies of the State of Nevada. If the beneficial owner of the voting or nonvoting securities of Wynn Resorts who must be found suitable is a corporation, partnership, limited partnership, limited liability company or trust, it must submit detailed business and financial information including a list of its beneficial owners. The applicant must pay all costs of the investigation incurred by the Nevada Gaming Authorities in conducting any investigation.

The Nevada Gaming Control Act requires any person who acquires more than 5% of the voting securities of a registered company to report the acquisition to the Nevada Gaming Commission. The Nevada Gaming Control Act requires beneficial owners of more than 10% of a registered company's voting securities to apply to the Nevada Gaming Commission for a finding of suitability within 30 days after the Chairman of the Nevada State Gaming Control Board mails the written notice requiring such filing. However, an "institutional investor," as defined in the Nevada Gaming Control Act, which beneficially owns more than 10% but not more than 11% of a registered company's voting securities as a result of a stock repurchase by the registered company may not be required to file such an application. Further, an institutional investor which acquires more than 10%, but not more than 25%, of a registered company's voting securities may apply to the Nevada Gaming Commission for a waiver of a finding of suitability if the institutional investor holds the voting securities for investment purposes only. An institutional investor that has obtained a waiver may hold more than 25% but not more than 29% of a registered company's voting securities and

maintain its waiver where the additional ownership results from a stock repurchase by the registered company. An institutional investor will not be deemed to hold voting securities for investment purposes unless the voting securities were acquired and are held in the ordinary course of business as an institutional investor and not for the purpose of causing, directly or indirectly, the election of a majority of the members of the Board of Directors of the registered company, a change in the corporate charter, bylaws, management, policies or operations of the registered company, or any of its gaming affiliates, or any other action which the Nevada Gaming Commission finds to be inconsistent with holding the registered company's voting securities for investment purposes only. Activities which are not deemed to be inconsistent with holding voting securities for investment purposes only include:

- voting on all matters voted on by stockholders or interest holders;
- making financial and other inquiries of management of the type normally made by securities analysts for informational purposes and not to cause a change in management, policies or operations; and,
- other activities that the Nevada Gaming Commission may determine to be consistent with such investment intent.

The articles of incorporation of Wynn Resorts include provisions intended to assist its implementation of the above restrictions.

Wynn Resorts is required to maintain a current stock ledger in Nevada which may be examined by the Nevada Gaming Authorities at any time. If any securities are held in trust by an agent or by a nominee, the record holder may be required to disclose the identity of the beneficial owner to the Nevada Gaming Authorities. A failure to make the disclosure may be grounds for finding the record holder unsuitable. We are required to provide maximum assistance in determining the identity of the beneficial owner of any of Wynn Resorts' voting securities. The Nevada Gaming Commission has the power to require the stock certificates of any registered company to bear a legend indicating that the securities are subject to the Nevada Gaming Control Act. The certificates representing shares of Wynn Resorts' common stock note that the shares are subject to a right of redemption and other restrictions set forth in Wynn Resorts' articles of incorporation and bylaws and

that the shares are, or may become, subject to restrictions imposed by applicable gaming laws.

Consequences of Being Found Unsuitable. Any person who fails or refuses to apply for a finding of suitability or a license within 30 days after being ordered to do so by the Nevada Gaming Commission or by the Chairman of the Nevada State Gaming Control Board, or who refuses or fails to pay the investigative costs incurred by the Nevada Gaming Authorities in connection with the investigation of its application, may be found unsuitable. The same restrictions apply to a record owner if the record owner, after request, fails to identify the beneficial owner. Any person found unsuitable and who holds, directly or indirectly, any beneficial ownership of any voting security or debt security of a registered company beyond the period of time as may be prescribed by the Nevada Gaming Commission may be guilty of a criminal offense. We will be subject to disciplinary action if, after we receive notice that a person is unsuitable to hold an equity interest or to have any other relationship with us, we:

- pay that person any dividend or interest upon any voting securities;
- allow that person to exercise, directly or indirectly, any voting right held by that person relating to Wynn Resorts;
- pay remuneration in any form to that person for services rendered or otherwise; or,
- fail to pursue all lawful efforts to require the unsuitable person to relinquish such person's voting securities including, if necessary, the immediate purchase of the voting securities for cash at fair market value.

Gaming Laws Relating to Debt Securities Ownership. [...]

Approval of Public Offerings. We may not make a public offering without the prior approval of the Nevada Gaming Commission if the proceeds from the offering are intended to be used to construct, acquire or finance gaming facilities in Nevada [...].

Approval of Changes in Control. A registered company must obtain the prior approval of the Nevada Gaming Commission with respect to a change in control through merger; consolidation; stock or asset acquisitions; management or consulting agreements; or any act or conduct by a person by which the person obtains control of the registered company.

Entities seeking to acquire control of a registered company must satisfy the Nevada State Gaming Control Board and Nevada Gaming Commission with respect to a variety of stringent standards before assuming control of the registered company. The Nevada Gaming Commission may also require controlling stockholders, officers, directors and other persons having a material relationship or involvement with the entity proposing to acquire control to be investigated and licensed as part of the approval process relating to the transaction.

Approval of Defensive Tactics. The Nevada legislature has declared that some corporate acquisitions opposed by management, repurchases of voting securities and corporate defense tactics affecting Nevada corporate gaming licensees or affecting registered companies that are affiliated with the operations of Nevada gaming licensees may be harmful to stable and productive corporate gaming. The Nevada Gaming Commission has established a regulatory scheme to reduce the potential adverse effects of these business practices upon Nevada's gaming industry and to further Nevada's policy in order to:

- assure the financial stability of corporate gaming licensees and their affiliated companies;
- preserve the beneficial aspects of conducting business in the corporate form; and,
- promote a neutral environment for the orderly governance of corporate affairs.

Approvals may be required from the Nevada Gaming Commission before a registered company can make exceptional repurchases of voting securities [...]

Source: Form 10-K filed with the SEC on March 3, 2014, by Wynn Resorts, Limited.

political maneuvering. Quebec in particular has a record of anti-merger rhetoric and action. This will be discussed below.

NATIONAL GOVERNMENTS

National governments interfere with mergers through a plethora of agencies that regulate individual industries or are charged with overseeing antitrust

laws. In addition, less obvious organizations have been created over the years, such as the ones that evaluate the ever-illusive national security interest of mergers. These organizations and their pronouncements are particularly vulnerable to political opportunism by governments. Similarly, good old political pressures and lobbying can become threats to the completion of a merger.

United States

One such government agency that operated in relative obscurity for many years but suddenly came to prominence is the Committee on Foreign Investments in the U.S. (CFIUS), an interagency committee that is chaired by the Treasury Department. It was established in 1975 during the Ford administration by an executive order and brought under presidential oversight in 1988 through the Exon-Florio Amendment. Since then, CFIUS has operated in relative obscurity until the sale in the year 2006 of British shipping firm P&O to Dubai Ports World, a company controlled by the government of Dubai. P&O operated a number of ports in the United States. Even though CFIUS saw no threat to national security from the transaction, it fell through eventually after another port operator managed to organize congressional opposition to the transaction. The publicity surrounding this merger led to legislative changes that expand the role of CFIUS in approving the acquisition of U.S. assets by foreign acquirers. Ever since, CFIUS approvals have been on arbitrageurs' radar screens.

Even before the Dubai Ports saga, CFIUS had an impact on occasional transactions that were subject to its review. One such transaction that normally would have flown under the radar screen of regulators was the 2005 acquisition of Cypress Communications by Arcapita, Inc., formerly Crescent Capital Investments. Arcapita is an investment bank in Bahrain that invests according to Islamic principles. *Private equity fund* may be a more accurate description of its business. The value of the acquisition was only \$40 million. Cypress submitted the acquisition to a voluntary review by CFIUS on April 4, 2005, and disclosed it in a press release on May 12. It is noteworthy that several other SEC filings between April 4 and May 12 did not mention the submission to CFIUS. Arcapita had already done a number of investments in the United States, including some household names, such as Church's Chicken and TLC Health Care Services.

Cypress filed "voluntarily" with CFIUS. This is a euphemism that the government uses to make the regulation appear less burdensome. In reality, if a company were not to make a "voluntary" filing, it would be contacted by one of the government agencies that form CFIUS, such as Homeland Security, Defense, or State, and would be encouraged to make a "voluntary" filing in strong terms.

CFIUS must review mergers in which the acquirer is a foreign government or an entity controlled by a foreign government. However, unlike in antitrust legislation, where clear thresholds are set, the requirements are vague for CFIUS filings. An acquisition must give a foreign entity control over a U.S. firm. CFIUS has 30 days to review whether the transaction affects national security. In order to give CFIUS maximum flexibility, the term *national security* has not been defined. CFIUS takes a number of factors into account when making that determination:

1. *domestic production needed for projected national defense requirements,*
2. *the capability and capacity of domestic industries to meet national defense requirements, including the availability of human resources, products, technology, materials, and other supplies and services,*
3. *the control of domestic industries and commercial activity by foreign citizens as it affects the capability and capacity of the United States to meet the requirements of national security,*
4. *the potential effects of the proposed or pending transaction on sales of military goods, equipment, or technology to any country [...]*
5. *the potential effects of the proposed or pending transaction on United States international technological leadership in areas affecting United States national security;*
6. *the potential national security-related effects on United States critical infrastructure, including major energy assets;*
7. *the potential national security-related effects on United States critical technologies;*
8. *whether the covered transaction is a foreign government-controlled transaction*
9. *factors involving non-proliferation and government-sponsored terrorism*
10. *the long-term projection of United States requirements for sources of energy and other critical resources and material*

50 U.S.C. 2170(f)

Following the initial 30-day review, there is an extended 45-day investigation period for certain transactions, including:

- A transaction that threatens to impair U.S. national security, and that threat has not been resolved within the 30-day review period.

- A transactions involving foreign government control, such as sovereign wealth funds.
- A transaction resulting in foreign control over critical infrastructure that CFIUS believes could threaten national security if one of the agencies constituting CFIUS requests a full investigation and CFIUS agrees.

Legislation was changed in October 2007, and CFIUS's new rules have so far not led to an increase in merger denials. Nevertheless, it is clear that we have entered an era in which scrutiny of foreign acquirers will expose arbitrageurs to higher regulatory risk. The committee membership has been widened to include the director of National Intelligence, as well as the U.S. trade representative, and CFIUS is now answerable to Congress. This increases the political risk substantially. Political oversight rests with majority and minority leaders of the House and Senate, the chair and ranking members of the Senate Banking Committee and the House Financial Services Committee, any House or Senate committee having oversight over the lead agency in the CFIUS review, and implicitly the members of the districts concerned as well as the relevant state governors. As Dubai Ports and 3Com illustrate, the risk is not purely regulatory. The political environment at the time of a merger is the real driver of deal hiccups, and national security concerns can be a pretext for political games. The 2007 legislation only reinforces this threat, because the results of an investigation now have to be provided to Congress. This will open investigations to political scrutiny by politicians, special interest groups, and business competitors. Even arbitrageurs could potentially use the political process to block an acquisition after taking a position that would benefit from a collapse of a deal. It is extremely difficult to estimate deal completion risk under these circumstances. The politicized character of CFIUS became apparent when British hedge fund The Children's Investment Fund (TCI) attempted to obtain board representation on rail carrier CSX in 2008. TCI owned 8.5 percent of CSX and had no plans to acquire CSX itself but rather to force it to sell itself to another firm. Most likely, CSX would remain a U.S.-owned firm. Nevertheless, several lawmakers were pressing CFIUS to investigate TCI for trying to take over critical infrastructure. It appears that CSX had convinced these lawmakers that a harmless proxy contest for board representation had national security implications. Yet political interference sometimes can dissipate when the transaction is friendly: In the acquisition of Anheuser-Busch by InBev, no national security issues existed. The representative in the district of Anheuser-Busch's headquarters acquiesced to the transaction when it turned out to become friendly and did not attempt to create a politically motivated national security problem.

Chinese buyers, in particular, are likely to be at risk in the near future of extra scrutiny under CFIUS. For example, when China's state-owned Tsinghua Unigroup proposed to acquire Micron Technology, a leading U.S. manufacturer of DRAM chips, in the summer of the year 2015, Republican Congressman Dana Rohrabacker, a senior member on the House Committee on Foreign Affairs, told the news service Dealreporter that "we face an arrogant power grab by a clique that runs China with an iron fist, and that iron fist should be of grave concern as a security threat to the United States." This comment followed a letter that Rohrabacker had sent to Treasury Secretary Jack Lew a few weeks earlier, which contained similar warnings.⁸

Companies are beginning to take CFIUS risks into account in their merger agreements. For example, in the 2013 agreement between Avago Technologies and LSI Industries a clause dealing specifically with CFIUS was inserted:

Notwithstanding anything to the contrary in this Agreement, including specifically Section 7.01(c) and Section 7.01(d), each of Ultimate Parent and the Company (as well as any of their respective Subsidiaries or Affiliates) shall take, or cause to be taken, such actions and agree to any reasonable action, restriction or condition to mitigate any national security concerns as may be requested or required by CFIUS or any other agency or branch of the U.S. government in connection with, or as a condition of, obtaining the CFIUS Clearance, except if any of the aforementioned actions, either individually or in the aggregate, is or would reasonably be expected to be significant to the business of the Acquired Companies, taken as a whole.

Source: Merger agreement filed on Form 8-K with the SEC on December 12, 2013.

From a public policy perspective, the sudden focus on national security is troublesome, because it comes at a time where foreign investment is desperately needed. The United States runs a twin deficit of the current account and budget and relies heavily on capital inflows to finance these deficits in the presence of a negative savings rate. Aggressive enforcement of national security concerns to deflect political pressure can have serious economic repercussions.

Canada

In recent years, Canada has been more aggressive in blocking foreign mergers on national interest grounds than the United States has. The Investment Canada Act (ICA) and related regulations trace their origins to 1973, when

its predecessor regulator Foreign Investment Review Agency was established to review whether particular foreign investments are beneficial to Canada. Like its U.S. counterpart, the agency Investment Canada had a sleepy presence until it rose from obscurity at around the same time as CFIUS, during the 2008 acquisition of MacDonald Detwiler and Associates (MDA) by Alliant Techsystems when the government invoked the ICA to block the merger. As Alliant is a defense company, it is believed that national security was the motivation for this decision. Interestingly, the U.S. did not block the acquisition of Space Systems/Loral by MDA four years later, so the defense aspect of MDA cannot be too significant.

All transactions above a certain threshold level need to be reviewed. For acquirers from WTO member states the level concerns asset values, is adjusted annually and amounted to C\$344 million, C\$354 million, and C\$369 million in the years 2013, 2014, and 2015, respectively. Starting April 2015, a change in the metric from asset value to enterprise value became effective, along with a gradual increase of that value from an initial C\$600 million to C\$1 billion over the next four years. However, the C\$369 million book value test will remain in effect for acquisitions by state-owned enterprises and in the case of the acquisition of cultural businesses.

In the approval process, the Minister of Industry must decide whether a merger provides a “net benefit to Canada.” Factors in the analysis include the following:

- The effect of the investment on economic activity in Canada;
- The degree of participation by Canadians in the business in question;
- The effect of the investment on productivity, efficiency, technological development, product innovation and product variety in Canada;
- The effect of the investment on competition;
- The compatibility of the investment with national industrial, economic and cultural policies; and
- The contribution to Canada’s ability to compete globally.

The Minister generally requires undertakings before giving approval.

In addition to the “net benefit” test, the government also performs a national security test. The financial thresholds do not apply to the national security test.

The political nature of ICA became apparent through two other transactions that were never officially blocked but where the government made its concerns clear through the ICA process. What is particularly worrying from an arbitrageur’s point of view is the lack of clear process and the somewhat haphazard approach taken by the government.

When Australian mining conglomerate BHP Billiton (BHP) attempted to acquire Potash Corporation of Saskatchewan Inc. in the year 2010 through a

hostile takeover, the government of the Province of Saskatchewan was vocal in its objection to the merger over fears of job losses in the province. Due to the intransparent decision making of the Minister, it is not known to what extent his decision to deny a finding of a net benefit was driven by the political intervention of the provincial government, which by law is supposed to have no input into the decision. Rather than continue negotiations, BHP gave up on the transaction and withdrew its bid.

In the summer of the year 2012, two foreign state-owned oil companies attempted to acquire Canadian energy companies: Malaysian oil firm Petronas Bhd sought to acquire Progress Energy Resources Corp. for C\$6 billion, and China National Offshore Oil Co. (CNOOC) tried to purchase Nexen Inc. for C\$15.1 billion. Arbitrageurs had concerns soon after the announcement that the acquisition by CNOOC could run into regulatory problems and the spread on the merger widened accordingly. Less anticipated, however, was the announcement by Prime Minister Harper on October 19 to block the acquisition of Progress Energy by Petronas. This decision was regarded widely as a political compromise: Harper most likely wanted to target the CNOOC merger but did not want to confront the Chinese government directly. Therefore, he blocked the Progress transaction as a warning shot. Both transactions were eventually completed but the episode illustrates well the political nature of the ICA review process.

The Progress Energy debacle led the government to tighten rules for the acquisition of Canadian companies by foreign state-owned enterprises (SOEs), with a particular view to energy assets and oil sands. Prime Minister Harper outlined these new factors in a statement made when the approval of the Progress/Petronas acquisition was announced:

First, the degree of control or influence a state-owned enterprise would likely exert on the Canadian business that is being acquired.

Second, the degree of control or influence that a state-owned enterprise would likely exert on the industry in which the Canadian business operates.

Third, and most importantly, the extent to which the foreign government in question is likely to exercise control or influence over the state-owned enterprise acquiring the Canadian business.

**Statement by Prime Minister Stephen Harper,
December 7, 2012**

The definition of what constitutes an SOE is very broad. Not only companies that are owned or controlled by a foreign government are considered SOEs, but also those that are *influenced* by a government, potentially widening the scope of the SOE review process to a much wider range of companies.

While the review threshold for non-SOE firms is planned to be raised to C\$1 billion enterprise value, it will remain at the asset-based levels listed above for acquirers that are SOEs. The impact of the 2012 reforms has been disastrous for foreign investment: investment by SOEs in the oil and gas sector declined by over 90 percent between 2012 and 2013.

One area that has received particular focus recently are layoffs following a merger. This became a sensitive issue after U.S. Steel laid off two thousand workers shortly after its acquisition of Stelco in the year 2007. Industry Canada alleged that this was in violation of its undertakings. While this concerns post-closing activities and thus is not directly relevant to an arbitrageur it could make it harder for proposed transactions to pass through the Industry Canada review if there are reasons to be concerned about the sincerity of the acquirer.

Unfortunately, it is not just the national government of Canada that has thrown a wrench into the wheel of M&A activity, the Province of Quebec has been similarly prolific in a fight against the ghost of hostile takeovers. Its principal motivation is to keep company headquarters in the Province. Under proposals made in February 2014, shareholders would have variable voting rights in takeovers based on the length of time for which they have held shares. For shares held for more than two years, shareholders would have received additional voting rights. This would have reduced the influence that arbitrageurs can have on the outcome of a merger. Other measures sought to eliminate the rationale for merging in the first place, such as a five-year ban on combining assets of the target with those of the acquirer. At the same time, Canadian Securities Administrators (CSA), the umbrella organization for regulators of the 13 provinces, promoted an alternative more modest proposal. It looked as if Canada would end up with two dramatically different regimes for takeover regulation in different provinces. However, by September 2014, all Canadian securities regulators had agreed on a common reform that changed takeover regimes only marginally. Most notably, a minimum bid condition for 50 percent of the shares was introduced, the minimum bid period was set to 120 days, and bids are extended automatically for 10 days once the minimum bid conditions are met.

Europe

Europe has not been as active as one might expect with respect to national security and national interest regulation. This may not even be necessary because governments can exert influence on large mergers merely through public pressure.

One country that aggressively seeks to exert political pressure on foreign takeovers under the pretense of national security is France. A first version of

the law in the year 2005 regulated the takeover of firms in the defense sector. During the \$17 billion hostile approach of General Electric for Alstom Economy, Minister Arnaud Montebourg issued a decree that extended the 2005 law to acquisitions by foreign firms in five sectors deemed strategic: energy, water, transport, telecoms, and health. The timing of the decree illustrates its political nature: It was issued not only in the middle of the battle over Alstom, but also 10 days prior to the elections for the European Parliament, for which the government fared poorly in opinion polls.⁵ Although Montebourg announced that he was not planning to use the decree actively, experience tells investors that future governments likely will not feel bound by that statement.

Nationalist concerns can also appear in countries that generally are considered as economically open. International Consolidated Airlines Group, S.A., the owner of British Airways, made a bid for Aer Lingus Plc on December 18, 2014, for €2.30/share. This bid, and a subsequent increase to €2.40, was rejected by Aer Lingus's board as insufficient. It was only on January 26, 2015, when IAG presented a €2.55/share bid that the Aer Lingus board said it was willing to present the proposal to shareholders. This was the third time since the year 2006 that a takeover bid had been made for Aer Lingus, with all prior bids blocked by successive governments. At that point Ireland's Deputy Prime Minister Joan Burton became involved and expressed concern over travel access to Ireland. At the same time, the airline employees' trade union Impact warned of layoffs as a result of the merger and was joined in these warnings by opposition politicians. As a result, the transport minister announced that sale of the Irish government's 25.1 percent stake to IAG would be put to vote in parliament. At this point, the merger had become entirely politicized. The opposition fretted over job losses, whereas the government found its pet niche in the question of air access to Ireland. During the course of the ensuing talks between IAG, the government, and unions, some politicians and unions reversed their opposition to the merger. However, the government and opposition remained hostile. At the time of writing, it looked as if the government may eventually be swayed to accept the bid under the condition that Aer Lingus retains its slots at Heathrow in order to ensure sufficient transportation capacity to Ireland.

CHINA: THE GREAT WALL OF LAWS

A special mention is reserved for China, whose mandarins have created a web of regulations that dwarf what arbitrageurs are used to in the West. A particular feature of Chinese regulations is the multiplicity of parallel structures that

the government creates to allow its companies to avoid the very regulations that the government has created in the first place. A long list of regulators influences mergers involving Chinese and increasingly non-Chinese companies that have substantial business with Chinese customers:

- The Ministry of Commerce (MOFCOM) handles the anti-trust review. Its review is discussed in more detail in this chapter.
- China Securities Regulatory Commission (CSRC): It regulates the acquisition of any company listed in China. Acquisitions of domestic companies by overseas buyers are subject to approval by the CSRC once MOFCOM approval has been secured. The CSRC also has influence on the acquisition of overseas-listed Chinese companies.
- The State Administration of Industry and Commerce (SAIC) issues business licenses and is involved in the transfer of licenses during a merger. It cooperates with MOFCOM on anti-trust reviews.
- State Administration of Taxation (SAT): Beyond the obvious requirement that all taxes be paid, all companies involved must subject themselves to SAT supervision.
- The State-Owned Assets Supervision and Administration Commission (SASAC) has regulatory authority when an acquisition involves a state-owned enterprise.
- State Administration of Foreign Exchange (SAFE). Investment by foreign companies in China is subject to SAFE supervision, in particular if it involves a cash component that requires the conversion of currency from or into Renminbi.
- National Development and Reform Commission (NDRC): The NDRC promulgates a Catalogue of Industries for Guiding Foreign Investment in which foreign investment is either encouraged, restricted, or prohibited.
- The State Council (China's Cabinet) gives no direct approval of mergers. However, it participates and arbitrates the internal decision-making process of the various agencies and is said to provide internal approval for high profile transactions.

In any instances many of these regulators have authority to approve or block a merger. In most cases their approval is a formality. New M&A regulations are usually issued jointly by several of these agencies.

As China's role in the world economy has increased, MOFCOM unexpectedly has become a significant arbiter of many large international mergers. At the time of writing it suffers from a shortage of experienced reviewers, which adds to delays in the review process. MOFCOM review has become a major bottleneck that slows down many international M&A transactions.

MOFCOM's Anti-Monopoly Bureau follows a pre-notification process similar to that of the European Union. Transactions that meet certain thresholds are subject to notification:

- Aggregate worldwide sales exceed RMB10 billion, and at least two of the merging firms each have sales of RMB400 million in China, or
- Aggregate sales in China exceed RMB2 billion, and at least two of the merging firms each have sales of RMB400 million in China.

Even if these criteria are not met MOFCOM has discretionary power to investigate a merger. In particular, this discretionary power is used liberally in transactions involving intellectual property, technology, or national interests.

Before a review can even begin a filing has to be declared complete by MOFCOM. This can add several weeks to the timeline. An extreme case is the BHP Billiton/Rio Tinto merger, which was eventually abandoned by the two firms, where it took five months until the filing was considered complete.

Once a filing is complete, Phase 1 of the review begins. MOFCOM has 30 days to render a decision, absent which the merger is considered approved. If MOFCOM does decide to review a transaction further, it will enter Phase 2. Many transactions will go into Phase 2 because MOFCOM is unable to complete its review during Phase 1. The increase in transaction volume that falls under MOFCOM review as a result of the integration of China into the world economy has overwhelmed MOFCOM's capacity. It suffers from a shortage of qualified staff, so that transactions get delayed into Phase 2 for purely administrative reasons.

In Phase 2, MOFCOM has 90 days to render a decision, with the possibility of an extension by a further 60 days.

Like its counterparts in the United States and Europe, MOFCOM can block transactions or approve them subject to conditions. Roughly two-thirds of all notifications are cleared in Phase 1, and most of the balance is cleared in Phase 2. The number of transactions that enter an extended Phase 2 review is comparatively small at about 5 percent of the total number. The longest a MOFCOM review takes is about six months.

Due to the slow processing of pre-merger notifications, an increasing number of companies decided not to file for pre-merger clearance and instead complete the transaction and pay a modest penalty. In response, MOFCOM introduced simplified review procedures in the year 2014, that allow companies to consult with MOFCOM prior to filing in order to ascertain whether the transaction even qualifies. The simplified application is made available publicly on MOFCOM's website for 10 days for comment by the public. Effectively antitrust regulation has been crowd sourced. Third parties that object to simplified treatment must provide evidence to support their claim.

MOFCOM also implements a national security review of mergers as the key operational actor, while a ministerial panel of various government agencies takes the ultimate decision. This review is required whenever a foreign investor takes control of a Chinese company. After a filing, MOFCOM has 15 days to determine whether a merger is subject to a national security review. Absent an affirmative decision, the merger is cleared. Like the competition review, a national security review takes two phases:

1. In a general review that takes around 30 business days MOFCOM and the Ministerial Panel request input from other ministries.
2. In a special review that can take an additional 60 business days, the ministerial panel takes a decision on the national security impact of the merger. If it cannot come to an agreement, the merger is referred to the State Council.

TRADE UNIONS

Trade unions are not normally associated with influence in corporate America. It is well known that they play a key role in European companies, but their influence in the United States has been relegated to the history books. Yet there are rare exceptions where trade unions can become a force in mergers. Unlike other stakeholders in mergers, union influence comes into play on both sides of the merger: As employee representatives, unions can have interests that conflict with those of investors. However, unions have also created substantial pension funds for the benefit of their members. When these funds are invested in companies that are going through a merger, then union interests are aligned with those of investors. As fewer and fewer workers are unionized and the size of the funds increases through compounding, unions are becoming a forceful defender of investor rights. The role of unions as capitalist owners of the means of production became widely known to the public with the bankruptcy of General Motors, in which the United Auto Workers union obtained 17.5 percent of the common stock, \$6.5 billion of preferred shares, and a \$2.5 billion note to finance a trust to pay for retiree health care costs. But unions can play a role not just in restructurings.

In April 2008, India's Essar Steel made a bid to acquire Esmark, a maker and distributor of steel and part owner of Wheeling-Pittsburgh, for \$17 per share. Russia's OAO Severstal, controlled by billionaire Alexei Mordashov, matched Essar's price of \$17 in May, and a bidding war broke out for the \$670 million acquisition of Esmark. Essar raised its bid to \$19 per share shortly after the \$17 a share bid from Severstal. Despite the higher price, Essar's bid was far from certain to win. In cases discussed in prior chapters,

it was management that backed lower-priced bidders. In Esmark's case, management backed the higher bidder, but the support for the lower bid from Severstal came from a trade union.

Esmark had a unionized workforce. The United Steelworkers (USW) had a contract with Esmark that gave the union the right to reject any deal that changes control of the company and find another buyer. When Esmark signed the initial merger agreement with Essar Steel, it failed to notify the union and give it an opportunity to find another buyer, as required by the agreement. The union decided to back Severstal, because it made a "highly credible restructuring plan designed to derive maximum value from Esmark, including a five-year capital improvement plan that carries the full support of the United Steelworkers." USW favored the bid by Severstal and filed for arbitration. Arbitration has been the standard method for dispute resolution between unions and employers in the steel industry since 1976. Each party can seek arbitration without the consent of the other party.

The arbitrator sided with the USW and set aside the merger agreement between Essar and Esmark. USW was given three days to find another buyer, which was not a challenge because Severstal had already expressed a firm interest. In addition, the USW obtained the support of Franklin Mutual Advisers, which managed funds that owned 60.1 percent of Esmark's shares. Franklin Mutual agreed to tender its shares to Severstal. It reasoned that the Essar transaction had no chance of being completed in light of the opposition by the USW and the clear agreement between Esmark and USW.

In June, Severstal raised its bid to \$19.25 per share. Essar conceded defeat and pulled out of the bidding. The merger was completed in early August 2008. Arbitrageurs had hoped for a continued bidding war between the two parties. Figure 12.1 shows that Esmark's stock price traded above \$20 during the bidding war. Speculating on bidding wars is difficult, and the timing is critical. It does not always lead to profits.

In today's market, it is more common for unions to play a role in corporate governance than to block mergers. When CVS Caremark attempted to acquire Longs Drug Stores for roughly \$2.9 billion, or \$71.50 a share, a number of shareholders opposed the transaction, and unions took an active role in the fight over the acquisition's price. Pershing Square Capital Management and Advisory Research, two hedge funds that had advocated a sale of Longs, argued that the real estate was valued not sufficiently high in the acquisition—a contention that was somewhat backed by the remark of CVS Caremark's CEO, Tom Ryan, that it had "conservatively valued the store locations alone at more than \$1 billion" when the price was negotiated. One investor claimed that Longs's CEO Warren Bryant had even said that there was an agreement between CVS Caremark and Longs not to disclose the real estate valuation publicly.

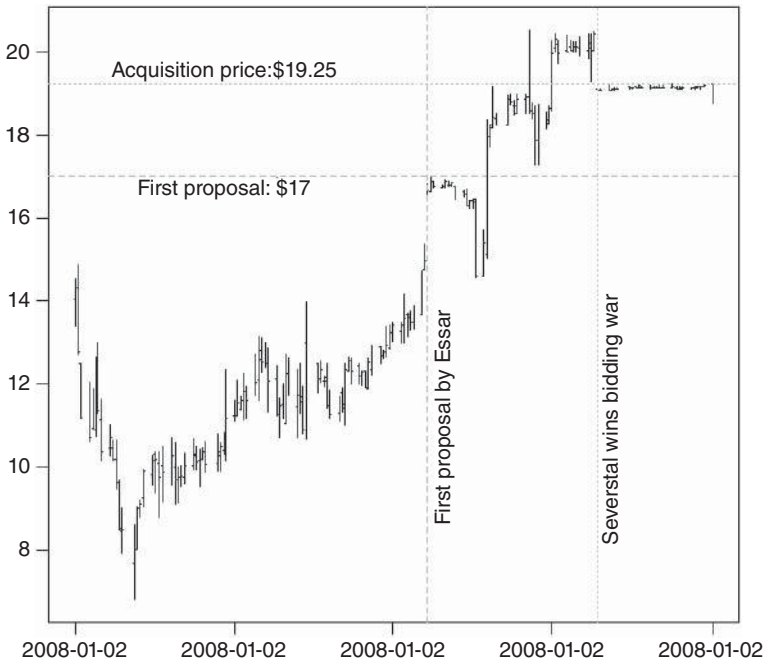


FIGURE 12.1 Stock Price of Esmark

Trade unions did not enter the fight over Longs directly but indirectly through CtW (Change to Win) Investment Group, an activist organization that provides advisory services to union-backed pension funds. CtW criticized not only the real estate valuation but also a number of other problems: Longs was sold at the lower end of the range that its board had considered adequate, the breakup fee equivalent to \$3 per share was uncharacteristically large for a transaction of this size, and Longs' assertion that it would not be able to monetize its real estate holdings, even though it had announced earlier that it was considering sale/leaseback transactions.⁶

When the first expiration date of the tender offer approached, only 4.5 percent of the shares had been tendered—shareholders were holding out for a better deal. Walgreens did make indeed a higher offer of \$75 per share, which was promptly rejected by Longs, citing antitrust concerns.

Union-affiliated pension funds are likely to continue to play an active role in mergers. Two types of pension fund activism can be distinguished: shareholder activism and social activism.⁷

The term *shareholder activism* refers to activities that improve corporate governance and ultimately increase the value of companies. *Social activism*

concerns questions that are often of a political nature, such as health benefits for employees or divestment of investments in certain countries. The value of social activism can be questionable in purely financial terms, but there is no doubt that shareholder activism benefits all investors, including merger arbitrageurs, no matter whether it is done by a union or by any other shareholder.

Outside of the United States, it is less common for unions to take on the role of a provider of capital. Instead, they are more likely to be an obstacle to the successful completion of a merger. One extreme example is the failed \$2.5 billion takeover of Cooper Tire & Rubber Company by Apollo Tyres for \$35/share announced in June 2013. Cooper operated a joint venture in China, Cooper Chengshan Tire, in cooperation with a local partner, Chengshan Group. Cooper owned 65 percent of the joint venture, Chengshan Group 35 percent. Following news of the takeover, Chengshan Group seized control of the joint venture and prohibited Cooper employees from entering the premises. Moreover, Chengshan refused to provide Cooper with crucial financial data that Cooper needed in order to prepare its financial statements. Without current financial statements lenders (Morgan Stanley, Deutsche Bank, Goldman Sachs and Standard Chartered Bank) would not be willing to provide financing for the transaction. Even Cooper's auditor refused to certify the financial statements.

Employees at the joint venture went on strike, with unions arguing that the takeover would subject the joint venture to substantial operational risk. It even took out an advertisement in the *Wall Street Journal* questioning, "Who can guarantee the success of integration between Chinese culture and Indian culture?"

Simultaneously, on the other side of the Pacific, USW seized the opportunity of the merger to reach a new wage agreement that would have cost Apollo \$1.50 to \$2 per share. It even obtained an arbitration ruling that due to the change in ownership the union had cause to renegotiate.

In reaction to these two developments, Apollo tried to negotiate a price reduction with Cooper. Instead of making concessions, Cooper sued Apollo in Delaware to compel it to close the merger. During the trial, it emerged that Chengshan Group had also expressed a desire to acquire Cooper and had even bid \$38 per share but was rebuffed as its financing sources were considered less reliable than those of Apollo. Witnesses also claimed that middle managers at the joint venture had threatened workers they would lose their jobs if they did not participate in the strike.

Cooper lost the lawsuit in Delaware and was unable to force a closing of the merger. On December 30, 2013, the takeover was terminated.

Four Ways to Fight Abuse of Shareholders in Mergers

The last few chapters have painted a gloomy picture of frequent shareholder abuse in mergers. Fortunately, investors have ways to fight back when they think that a firm is sold on inadequate terms. This chapter discusses the methods shareholders can employ to defend their interests.

"JUST SELL" IS FOR LOSERS

Some commentators argue that shareholders unhappy with a company's management can just sell their shares. A similar line of argument maintains that investors can always vote with their feet and thereby punish management. Some investors even go so far to invest only in firms that are liquid enough to allow them to exit easily if they are dissatisfied or disagree with management.

Unfortunately, this simplistic argument actually plays into the hands of unscrupulous management. Many examples in this book deal with conflicts of interest where a buyer tries to acquire a target company at a low valuation. When that buyer of a firm is its management team, it is in a position to make the firm unattractive to investors in order to stage a carefully crafted low-priced buyout. Investors who sell because they are unhappy with management will, in fact, play into the hands of such managers. Chapter 11 describes a plot by majority shareholder Lukoil to squeeze out the minority shareholders of Chapparral Resources. Lukoil caused Chapparral's management to make a number of negative announcements about the company's prospects, thereby driving down the share price. The depressed share price allowed Lukoil to acquire Chapparral for much less than it would have traded at if investors had known the actual drilling schedule that planned an increase in well drilling and hence increased oil production.

It is not even necessary that a company's management engages in such blatantly wrongful conduct in order to depress a stock price. Benign neglect is often sufficient to drive down a share price to a level where a going-private

transaction becomes attractive. Unlike open-ended mutual funds, public companies do not trade at net asset value. Instead, the price is set by the law of supply and demand. When there are more sellers than buyers, the stock will drop; conversely, if there are more buyers than sellers, it will rise. Various valuation techniques have been developed to determine an intrinsic value of a company. These techniques are all valid, but there is no guarantee that the market will realize the theoretical price that they come up with. Indeed, value investors have coined the term *value trap*—a company that trades at a discount to its theoretical value and remains at a discount forever. The market never recognizes the intrinsic value of a value trap stock.

Value traps get into a vicious circle of poor results and poor stock performance. As the company's financial results deteriorate, selling pressure mounts. The stock price falls, which reduces the company's financial flexibility. Raising new capital becomes expensive, and bank covenants may be broken, which further increases the cost of capital. As a result, financial performance continues to deteriorate and selling pressure increases.

Investors who sell their holdings in a company whose management destroys shareholder value act perfectly rationally from their own narrow perspective. In the aggregate, however, they keep management entrenched when they sell. By selling, investors only aggravate the valuation discount of such a company. After all, not many investors are willing to acquire shares in a firm whose governance is inadequate or whose management is inept.

Activist investors have long recognized this inefficiency and seek out companies where changes in governance can unlock shareholder value. Activists try to obtain control of the firm and hire new management that will improve its performance, or sell the firm outright for a premium. It is an investment style that carries its own risks and will work only in certain circumstances. Not every troubled firm will benefit from the efforts of activist investors.

If shareholders are invested in a company targeted by activists, they stand a good chance that the vicious circle of poor performance and selling pressure will be broken. Shareholders in other companies are out of luck. These companies either will go out of business or, more likely, will be acquired by another firm.

It is the acquisition of the firm that creates problems. If management has a poor record in running the firm, likely it will do as poor a job in selling it. The interests of shareholders and managers are rarely aligned in a merger, as was discussed in Chapter 9. Once the sale of an underperforming firm is negotiated, most shareholders throw in the towel and accept the deal as done. Small investors are relieved to see the end of suffering from poor management; they are forced to give up the hope for a turnaround. Larger holders are happy to see a "liquidity event": Because few investors were

willing to buy into an underperforming company, holders of large blocks of shares were unable to sell. The merger provides them with a willing buyer for all of their shares.

It is not unusual to see deals of this type done out of desperation. Shareholders are willing to accept any price as long as they can sell. They are willing to leave money on the table and accept a low valuation. In the case of large-cap companies, disgruntled investors sometimes take their discontent public and oppose a merger, trying to obtain a better price. The record of such actions is variable and often fails. This option is discussed later in this chapter. In the case of small-cap companies, shareholders rarely oppose a transaction. These companies are too small to generate headlines, so that a campaign to oppose a merger is difficult to conduct.

However, it is just in the small- and micro-cap space that most shareholder abuse occurs. Minority squeeze-outs and management buyouts of these smaller companies are particularly at risk. A passive, frustrated, and apathetic shareholder base is an invitation for potential buyers to force a deal on poor terms. Shareholders should question why a buyer is willing to acquire a firm with little prospects. This question is particularly pertinent in the case of financial buyers. A strategic buyer can always argue that synergies will make the acquisition of an underperforming company a good investment. However, if the very management team that ran a company into the ground partners with a private equity firm to acquire the company, it is not just the buyout itself that is questionable; the entire recent history of the company appears in a different light. Perhaps much of the reason for the company's poor performance was the unwillingness of management to make the necessary operational improvements. The only reason why a financial backer is willing to fund the acquisition is probably management's plan to improve the company; shareholders should wonder why these improvements are not made while the company is held publicly.

Shareholders who just sell under these circumstances effectively are enriching the very group that has caused their losses. Public shareholders lose what management and their financing partners make in excess returns. Selling is the strategy for losers. The winning approach is to try to capture some of the upside for the public shareholders that would otherwise go to the acquirer.

THE RISE OF SHAREHOLDER ACTIVISTS

Activist investors specialize in identifying poorly performing companies where sufficient pressure exerted by shareholders is likely to lead to change. A typical approach for an activist investor is to acquire a stake between

5 and 10 percent and then meet with management to propose change. If management is unresponsive, the activist may then write a letter to management that outlines its proposals and then make it public—in the United States, by filing it with the SEC. Many activists publish lengthy PowerPoint presentations to spread their investment thesis to a wide investment public.

An activist investors teaming up with a company to facilitate a hostile takeover made its debut April 22, 2014, when William Ackman's activist hedge fund Pershing Square Capital Management LP partnered with the Canadian pharmaceutical firm Valeant to launch a hostile bid for Allergan Inc. for \$62.8 billion. Pershing Square had acquired a 9.7 percent stake in Allergan and, after Allergan had rejected two acquisition proposals at escalating prices from Valeant, proposed a slate of six directors to replace the current board at a special meeting of shareholders. The rhetoric then escalated, with Allergan labeling Valeant's business model unsustainable and seeking help from Quebec's financial regulator Autorite des marches financiers, alleging Valeant had misled the market. Moreover, Allergan filed a lawsuit against Valeant and Pershing Square, arguing that by forming a syndicate to bid for Allergan, the two parties were committing insider trading. In high-stakes activist battles, such rhetoric and lawsuits are not uncommon, as are appeals to regulators for help. In general, however, the harder a target fights, the more desperate it is. How desperately Allergan wanted to avoid a merger with Valeant became clear when Allergan made moves to acquire Salix Pharmaceuticals for \$10 billion using a transaction structure that would not have required shareholder approval—at that point, many shareholders had indicated support for the Pershing Square/Valeant group and, given the opportunity to vote, probably would have rejected this merger. Had the Salix merger gone ahead, the Valeant/Pershing Square acquisition attempt most likely would have been frustrated. Eventually, the battle was resolved on November 17, 2014, when Allergan entered into a friendly merger agreement with Ireland's Actavis plc for \$67.4 billion.

So far, this is the only time a strategic acquirer has entered into an alliance with an activist investor. However, given the financial firepower of many activist funds that allows them to purchase meaningful stakes in large and even mega capitalization companies, it would not be surprising if other potential hostile acquirers use this technique in the future.

CASE FOR ACTIVIST MERGER ARBITRAGE

Fortunately, shareholders have some tools at their disposal to defend their interests in mergers in which the consideration paid is inadequate or where management was grossly negligent in selling the firm without maximizing shareholder return. The fiduciary duties of a board of directors in the sale of

a company have been discussed at length in Chapter 8. Readers may want to revisit that chapter at this point.

Merger arbitrageurs and other investors in companies that are subject to a troubled buyout should not hesitate to adopt aggressive tactics to obtain full value. Although any investor can employ the strategies discussed here, merger arbitrageurs who follow them will be considered to adopt an “activist merger arbitrage” investment style. Activist merger arbitrage is an extension of classic merger arbitrage in combination with tactics otherwise employed primarily by activist investors.

Figure 13.1 illustrates how activist merger arbitrage fits into the life cycle of a corporation and the related investment strategies. While a company underperforms, it is considered a value investment. A value investment may recover through a number of catalysts, when it is considered “value” by a sufficient number of market participants, or when an activist investor gets involved. An activist often will seek to have the company sell itself. In the absence of an activist, the company’s management may decide itself that “strategic alternatives,” such as a sale, are the best option for the company’s future. Either way, once a company is in play, its stock price

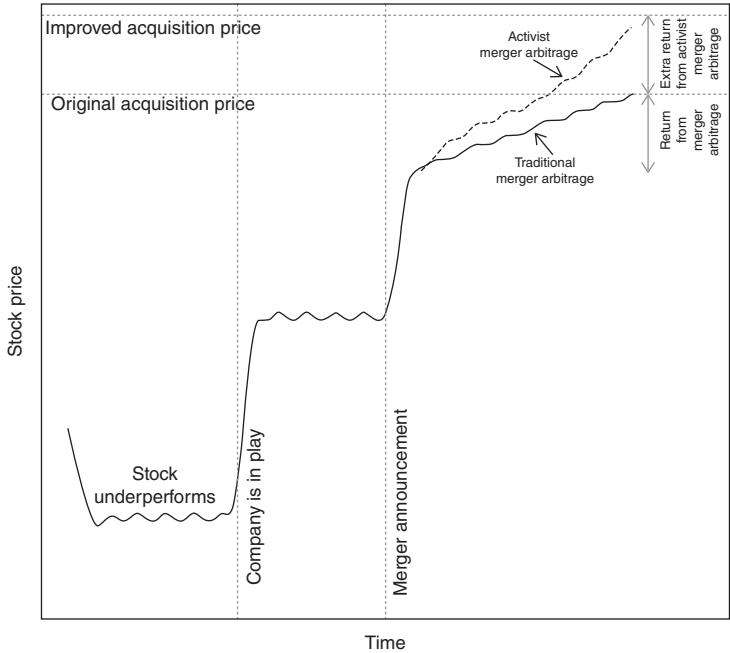


FIGURE 13.1 Late Stages of a Company's Life

increases, generating an instant return for its investors. As soon as a merger is announced, the company's stock price will jump to a level just short of the acquisition price. At this point, the firm becomes a merger arbitrage investment. The potential return is the spread between the merger consideration and the price at which the arbitrageur can buy the firm prior to the merger.

Activist merger arbitrage seeks to increase the return available to the arbitrageur by increasing the amount paid in the transaction. Of course, this will work only in cases where the board of the target has not made a serious effort to maximize shareholder value. If the company has been shopped properly and gone through a real auction process with multiple bidders, it will be impossible for even the most determined activist investor to find a buyer that is willing to up the price paid. However, in many of the cases detailed in this book, public shareholders were shortchanged. In such instances, an activist merger arbitrage might be successful.

Various tactics are available to activist merger arbitrageurs. They can be classified broadly into two categories, legal tactics and public pressure:

1. Legal tactics

- Appraisal rights
- Class actions
- Requests for documents

2. Public pressure

- Proxy campaigns
- Withholding shares in tender offers

These tactics are detailed in the remainder of this chapter. It should be noted that even though investors may have a good reason to think that they are not getting sufficient consideration in a merger, it is an entirely different matter to make a legal case. For most tactics, the burden of proof is on the plaintiff (i.e., the shareholder). The business judgment rule holds that courts will, by default, assume that a board took a decision in good faith, even if it turns out to have been a bad decision after the fact. Investors who want to attack a merger must make sure that they can find strong evidence of wrongdoing. In addition, they must show that this wrongdoing had a material impact on the transaction.

Activist merger arbitrage has found a footing in recent years among investors. Figure 13.2 shows the trend in activist merger arbitrage over the years. In a study of activist merger arbitrage over the period of the years 2000 through 2013, Wei Jiang, Tao Li, and Danqing Mei find 210 U.S. mergers in which investors intervene in an already announced merger. The overall success rate is 50.5 percent with a cumulative average abnormal return of 4.8 percent.¹

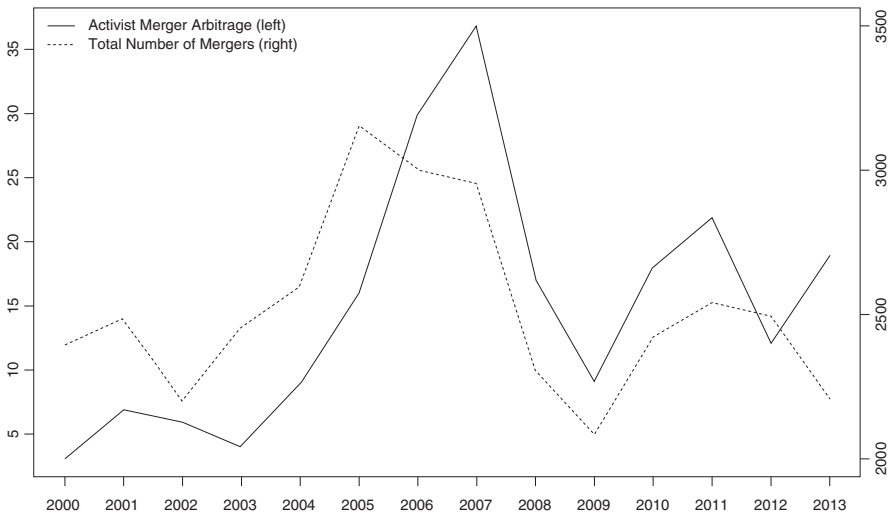


FIGURE 13.2 Number of Annual Activist Merger Arbitrage Events (U.S. Mergers Only)

This confirms the success that activist merger arbitrage can have: remarkably, although the strategy seeks to block an already announced deal, only an insignificant drop in the completion rate can be noticed in the sample. Only 8 transactions of the 210 were actually blocked and in 26 cases the bid was withdrawn. The top four activist merger arbitrageurs over that period are also known for shareholder activism in general: Gabelli Asset Management, Ramius (now Starboard), Carl Icahn, and Elliott Associates.

Despite its success, the level of ownership of a typical activist merger arbitrageur amounts to only 7.1% (median). The elevated level of trading volume following the announcement of a merger that was noted earlier works to the advantage of activist merger arbitrageurs as it allows them to accumulate this level of ownership in only 15 days (median). The most common tactics employed are public criticism (151 cases of the 210 sample), proxy solicitation (45 cases) and exercising appraisal rights (22 cases). Alternative transactions were proposed in only 10 cases.

LEGAL TACTICS

Appraisal Rights

Many jurisdictions give shareholders the possibility to get a court to value their shares when a company is acquired. Even though the transaction may be approved by the requisite majority dissenting minority shareholders have such anti-oppression remedies available to them. Switzerland was the first country to introduce an anti-oppression statute in the year 1936.

In Delaware, *appraisal rights*, sometimes called *dissenters' rights*, are available only in cash deals and not normally in the case of stock-for-stock deals.² Shareholders in cash deals who feel that they are not getting a sufficient payment for their shares can apply for a court-supervised valuation of their shares. They will receive the value determined by the court, whether higher or lower than what was paid in the merger.

Appraisal rights are for shareholders what covenants are for bond holders: an implicit contract that protects them from abuses by management or majority shareholders. They are particularly relevant in squeeze-outs of minority shareholders, as will be seen in the Chaparral Resources/Lukoil example later.

However, for most investors, perfecting appraisal rights is unappealing because they have to be performed individually and cannot be combined into a class action. That means that each shareholder has to bear its own legal costs.³ Legal costs can amount to \$100,000 or much more, depending on the length and complexity of the litigation. In addition, the cost for valuation studies, court costs, deposition, expert witnesses, and similar expenses

also must be borne by the plaintiff. These costs will amount to at least five figures and cannot always be paid on contingency. Therefore, perfecting appraisal rights is attractive only for shareholders with sufficiently large holdings to make the litigation economically viable. Small shareholders who feel shortchanged can always use traditional class action litigation to get a higher payout. Some prominent large investors who have sought appraisal rights are Mario Gabelli's Gamco Investors Inc. in several instances (8.25 percent holding in a \$10.8 billion Cablevision buyout, Carter Wallace, Medpointe Healthcare) and Applebee's director and sixth largest shareholder, Burton "Skip" Sack, who held over \$60 million worth of Applebee's stock. Small shareholders may be restricted even further in their ability to demand appraisal if proposals are enacted that, at the time of writing, have been put forth by the Corporation Council of Delaware. Under this proposal, holders of less than 1 percent of \$1 million worth of shares, based on the merger price, would no longer have the ability to seek appraisal.

One of the advantages of appraisal rights over litigation for breach of fiduciary duty is that shares are valued based on their intrinsic value. In a breach of fiduciary duty litigation, a shareholder needs to prove first that such a breach occurred. This makes the argument in appraisal litigation a little easier for plaintiffs. However, it can be implied that if an appraisal action is successful, there must have been a breach of fiduciary duty. If there were no breach of fiduciary duty, then the company would have been sold at fair market value, and it would be unnecessary and impossible to sue for appraisal.

A substantial economic difference between appraisal rights and litigation for breach of fiduciary duty lies in the compensation of lawyers representing plaintiffs. It is not uncommon to see both types of litigation submitted in parallel to the court. Breach of fiduciary duty litigation usually is filed as a class action on a contingency fee basis. This implies that the law firm representing plaintiffs assumes the risk of not getting paid if the class action fails. In return for this risk, the law firm typically is rewarded with one-third of the proceeds of the litigation in case of a success. For large holders, one-third of their incremental proceeds from the litigation can amount to more than they would pay if they pursued litigation independently from the class action. Therefore, the optimal strategy for large shareholders is to file a demand for appraisal and opt out of the class action. Of course, plaintiffs are free to negotiate a compensation formula of their choice when retain counsel to pursue appraisal rights. The author has retained counsel on a contingency fee basis in appraisal cases under the assumption that the interests will be better aligned under such an arrangement. A contingency fee for legal counsel helps to mitigate economic risks.

More recently, appraisal rights have been discovered as a tactic by hedge funds. It has been reported that hedge funds specializing in appraisal rights

have been launched with considerable capital commitments. It remains to be seen what backlash, if any, this new popularity of appraisal rights will have. It has been reported that in recent years, the popularity of appraisal actions has soared among investors to the point that some observers are now talking of *appraisal arbitrage* as an investment strategy.⁴ The cause of this increase has been blamed by different observers on the *Transkaryotic* decision of 2007 (see below) as well as on an increase in the statutory rate of interest to 5 percent. However, these changes do not fundamentally alter the chances of success and economics of appraisal cases. They make, at best, marginal improvements. Therefore, other factors are more likely to be the drivers of this popularity.

In the 10 years from 2004 to 2013, a total of 129 appraisal cases were filed against 106 public company mergers in Delaware for an average of \$30 million in forgone consideration. This number of cases and dollar amounts are a small fraction compared to the myriad of breach of fiduciary duty claims that were brought over the same time in connection with mergers. In 2004, roughly 5 percent of all mergers where appraisal rights were available in Delaware saw this being taken up. In 2013, this had surged to about 17 percent. The investors who file appraisal actions are mostly repeat offenders. Since 2011, more than 80 percent of cases filed involve a plaintiff who has previously litigated other appraisal cases. Most of these, in turn, are filed by only seven groups of investors.

The study by Wei Jiang, Tao Li, and Danqing Mei mentioned above also looks at the outcome of appraisal actions in Delaware's Chancery Court. Over the period covering the years 2000 through 2013 they find that activist merger arbitrageurs filed appraisal against 23 unique targets, a rather modest number but consistent with the success rate that activist merger arbitrageurs have. The consequence of their success is that they do not need to file for appraisal because they obtained fair value through their intervention.

Because Delaware does not want its courts to be flooded by appraisal cases, it has instituted a complex procedure that makes appraisal actions difficult for investors. The procedure must be adhered to exactly, and any deviation will void an appraisal action. The shareholder will instead receive the default consideration. An investor seeking to perfect appraisal rights needs to meet a number of stringent requirements, which are spelled out in Section 262 of Delaware General Corporation Law (DGCL). This section is included as an appendix in proxy statements in deals for which appraisal rights are available:

1. The shareholder must notify the company of her dissent and plan to seek appraisal prior to the shareholder meeting.

2. The shares must not be voted in favor of the transaction at the shareholder meeting. This means that the shareholder must abstain, vote against, or not vote at all.
3. The company sends a letter to shareholder who notified it (under point 1) of its intent to seek appraisal, giving the shareholders 30 days to demand fair value for the shares.
4. The shareholder must then notify the company of the number of shares for which she seeks appraisal. The shareholder has 60 days to reverse the election to seek appraisal.
5. The company has 20 days to respond to the shareholder. It must include in its response a list of all the shareholders who are seeking appraisal.
6. The shares must be held through the effective time of the merger.
7. The shareholder must file a petition with the court within 120 days of the effective time of the merger. If no petition is filed, the shareholder will receive the same merger consideration as the other shareholders. This is a last-minute exit strategy for shareholders who seek appraisal rights but then change their mind.

The court will look at the value of the company at the time of the merger in its appraisal decision. This means that all benefits that the company might get from the merger, such as synergies, will be ignored.

Merger agreements frequently limit the percentage of shares for which appraisal rights can be sought. It is typical to terminate a merger agreement if appraisal is sought for more than 5 percent, sometimes 10 percent, of shares. This provision aims to reduce litigation risk for the buyer. In addition, tax-free treatment of some mergers can be lost as a result of appraisal rights under some circumstances.

Beyond the cost of legal fees and uncertainty whether a shareholder will win, there is another important factor that limits the attractiveness of appraisal rights: time value of money. Delaware courts award shareholders who seek appraisal rights interest at a rate of roughly 5 percent over the Federal Reserve discount rate from the time of the merger until the court has a decision or the litigation is settled. This interest earned amounted to roughly 10 percent throughout most of the 2000s and only 5 percent at the time of writing. Whether this return is sufficient to compensate a plaintiff for the time value of money is a question that each potential plaintiff must weigh carefully. If the litigation is drawn out over an extended period of time, potentially several years, then the forgone time value of money can more than offset any increase in payouts received. On the other end, the acquirer of a company potentially can benefit from making payment for the

shares later if its cost of capital is above the statutory rate. The compounding on the interest can be semiannual, monthly, or quarterly at election of the court.

It appears that a number of investors who use appraisal arbitrage file a petition for arbitration specifically to earn the 5 percent interest rate spread while not expecting to receive an increase in the merger consideration. Essentially they view appraisal as a high yield investment. It has been suggested by corporate lawyers that this has become a rampant problem in Delaware as most appraisal actions, allegedly, are no longer motivated by the merits of the merger valuation. However, most appraisal practitioners doubt that the problem is as severe as it has been suggested. Nevertheless, a remedy has recently been proposed by the Corporation Council of Delaware that would allow a company to make the payment of the merger consideration, or a partial payment thereof, and thereby reduce the amount of interest that would have to be paid. Although this proposed measure may have the intended effect of making appraisal arbitrage for the purpose of earning interest less attractive, it actually increases the attractiveness of appraisal for many other investors. Under the current procedures, an investor who files for appraisal holds an illiquid position in an unsecured claim of uncertain value against the company. However, if part of that claim is prepaid by the company, the position is no longer illiquid and the investor can put that capital to work in other investments. As a result, appraisal actions may actually become more attractive in the future.

The typical time frame for an appraisal action is one year, and another year should be added in the case of an appeal. An appeal in Delaware must be filed with the Delaware supreme court. If the company appeals the appraisal judgment, it is required to post a bond with the court. This bond should be equal to the amount of the judgment that is being appealed. The Supreme Court generally defers to findings of the chancery court, so that most appeals are of little consequence other than increasing legal costs for all parties. The time frame can stretch if a shareholder class action is litigated in parallel with the appraisal action. In this case, courts will try to combine discovery of the two cases. Because class actions proceed more slowly than appraisal cases the latter is delayed. In one case the author is familiar with, the delay due to the class action, which ultimately was dismissed, exceeded one year.

Delaware courts will look at a variety of measures to determine fair value and usually do not put much weight on market value. Instead, the company is valued as a going concern. "Proof of value can be established by any techniques or methods that are generally acceptable in the financial community or otherwise admissible in court."⁴ Discounted cash flows (DCF) are among their favorite tools. Under this approach, cash flow projections are made, a terminal value is estimated, and these are then discounted at a

weighted average cost of capital (WACC). Cash-flow projections are usually based on management's own forecasts. The terminal value is more difficult to determine; the courts go with multiples or a constant growth rate approach. Finally, the WACC is estimated using the capital asset pricing model (CAPM). It is clear that these methodologies are highly dependent on the assumptions. As a result, the expert witnesses of the shareholder and the company usually find highly divergent values. The Gordon dividend growth model also is used frequently. It is very sensitive to growth rates and thereby can lead to very high valuations. More recently, comparable company analysis and comparable transactions have become more prominent in appraisal cases. The toolbox used by the courts is evolving. Table 13.1 shows the valuation methods used in some appraisal actions.

One of the key requirements of appraisals is that the fair value determined by the court be "exclusive of any element of value arising from the accomplishment or expectation of the merger or consolidation."⁵ This means that any synergies that a buyer expects to realize in the merger cannot be considered in the valuation. Similarly, no minority discount is used in appraisal actions, and costs related to the merger also cannot reduce the appraised value. In a two-step merger, the date on which the company is appraised is that of the second step. This is important in that the new majority holder can already take actions to improve the value of the firm once it gains control after the tender offer. Any such improvements will increase the value of an appraisal action.

In addition to receiving the appraised value of the investment, the shareholder has also the right to interest from the date of the merger until the judgment. Interest rates used vary widely. Table 13.1 lists rates used in some appraisal cases.

Mergers typically will be done at a premium because the buyer expects to achieve savings through synergies and is willing to share these savings with the selling shareholders. Therefore, if the sale had been negotiated in a fair manner, there would be no incentive for shareholders to seek appraisal rights. It becomes an attractive option only in two scenarios:

1. Shareholders feel that the merger consideration is grossly inadequate, and a solid case can be made for a significantly higher payout.
2. The merger agreement stipulates a maximum percentage of shares that can seek appraisal, and a shareholder with a block larger than the maximum seeks appraisal rights. In this case, a buyer sometimes can be encouraged to pay more. A precondition is, of course, that the original merger consideration valued the target at the low end of a reasonable valuation range. Pressing appraisal rights to squeeze additional concessions from a fully priced merger is doomed to fail.

TABLE 13.1 Outcome of Appraisal Actions

Case Name	Date of Decision	Date of Offer	Defendants' Offer per Share	Court's Determination of Fair Value	Premium	Method Used by Court	Annual Percentage Rate
<i>Gholl v. eMachines, Inc.</i> , No. Civ. A. 19444-NC	11/24/04	12/31/01	\$1.06	\$1.64	55%	DCF analysis	6.21%, compounded monthly
<i>Dobler v. Montgomery Cellular Holdings Co.</i> , No. Civ. A. 19211	9/30/04	11/14/01	\$8,102.23	\$19,621.74	142%	Comparable transactions (65%); DCF (30%); comparative companies (5%)	8.25%, compounded quarterly
<i>Cede & Co. v. Medpointe Healthcare, Inc.</i> , No. Civ. A. 19354-NC	9/10/04	9/28/01	\$20.44	\$24.45	20%	DCF analysis	7.50%, compounded quarterly
<i>Lane v. Cancer Treatment Centers of America</i> , No. Civ. A. 12207-NC	7/30/04	3/20/91	\$260	\$1,345	417.31%	DCF analysis (85%); comparable companies (15%)	9.14%, compounded monthly
<i>Cede & Co v. Technicolor</i> , No. Civ. A. 7129	07/09/04	In 1983	\$23	\$21.98	(4.44)%		10.32% from 1/24/83 to 8/2/91; 7% from 8/3/91 until date of paid judgment

<i>In re Emerging Communications, Inc.</i> , Shareholder Litig. No. Civ. A. 16415	6/4/04	10/19/98	\$10.25	\$38.05	271.22%	DCF analysis	6.27% compounded monthly
<i>Doft & Co. v. Travelocity.com</i> , No. Civ. A. 19734	4/1/04	4/11/02	\$28	\$32.76	17%	DCF analysis; adjusted per share value by adding a 30% control premium	Legal rate,* compounded quarterly
<i>Cede & Co. v. JERC Acquisition Corp.</i> , No. Civ. 18648	2/10/04	8/29/00	\$13	\$13.58	4.46%	DCF analysis	4.73%, compounded monthly
<i>Union Illinois 1995 Investment Limited Partnership v. Union Financial Group Ltd.</i> , C.A. No. 19586	1/5/04	\$9.40 with possibility of additional \$0.80	\$8.74	(7.02)%			Legal rate,* compounded monthly
<i>Prescott Group Small Cap v. The Coleman Co.</i> , No. Civ. A. 17802	9/8/04	1/6/00	\$5.83	\$32.35	454.89%	Drawn from expert's company-specific transactions	Legal rate,* compounded monthly
<i>Taylor v. American Specialty Retailing Group</i> , No. Civ. A. 19238	5/16/03	10/15/01	\$2,200	\$9,079.43	312.70%	DCF analysis; comparable transactions	Legal rate,* compounded quarterly

(continued)

TABLE 13.1 (Continued)

Case Name	Date of Decision	Date of Offer	Defendants' Offer per Share	Court's Determination of Fair Value	Premium	Method Used by Court	Annual Percentage Rate
<i>Gentile v. Singlepoint Financial</i> , No. Civ. A. 186677-NC	3/5/03	10/23/00	\$2.46	\$5.51	123.98%		11 % compounded quarterly
<i>Gonsalves v. Straight Arrow Publishers</i>	3/13/02	1/8/86	\$100	\$262.96	162.96%		SAP's cost of borrowing based on prime rate of interest less 0.25% and Gonsalves' opportunity cost based on Whitman's prudent investor rate
<i>Paskill Corp. v. Alcoma Corp.</i> , No. 321, 1999	1/1/00		\$9,480.50	\$10,049	6%		Unknown

* 5% over the Federal Reserve discount rate as that rate fluctuates during the period.

Source: Based on Geoffrey Jarvis, "State Appraisal Statutes: An Underutilized Shareholder Remedy," *Corporate Governance Advisor* 13, no. 3 (May/June 2005); Committee on Business and Corporate Litigation, *Annual Review of Developments in Business and Corporate Litigation* (Chicago: American Bar Association, 2006); J. Eisenhofer and M. Barry, *Shareholder Activism Handbook* (New York: Aspen Publishers, 2008 supplement); and author's research.

Most shareholders do not hold their shares directly but through a brokerage or trust account. These shares are not held on the books of the corporation in the name of the shareholder but in the name of Cede & Co., which acts as the depository for most brokers in the United States. In legal parlance, the shareholder is a “beneficial” owner, whereas Cede & Co. is the owner of record. When a shareholder is required to notify the company of the intent to seek appraisal, the notification actually must come from the record holder of the shares, or Cede & Co. for these investors. The shareholder must contact Cede & Co. and instruct it to demand appraisal for the shares held by the investor. The time required to get the relevant documents from that firm should not be underestimated.

An important aspect is the availability of appraisal rights on shares acquired after the record date under certain limited circumstances. In a recent ruling by Chancellor Chandler of the Delaware chancery court involving an appraisal action brought for shares of Transkaryotic Therapies, which was acquired by Shire Pharmaceuticals, the court ruled that even shares acquired after the record date can be included in an appraisal action. In this case, Cede & Co. had demanded appraisal for shares for which it was the record holder on behalf of a beneficial owner. The beneficial owner subsequently sold these shares, and the new owner sought appraisal. The court ruled that the change in beneficial ownership was irrelevant because the statute requires only that the holder of record make the demand for appraisal. This opens the door for arbitrageurs to obtain full value on shares acquired after the record date. It often can be difficult to buy large positions before the record date, because the proxy statement has been available only for a short time and there may not be enough trading volume in a stock to permit the acquisition of a significant position. The Transkaryotic decision is often blamed for the recent increase in appraisal cases. However, as already discussed, it does not change the economics of appraisal actions fundamentally, and this is unlikely to be a driving factor in the surge of appraisal cases. After all, appraisal is sought only when shareholders believe that their shares are worth significantly more than what they receive in a merger. This is also confirmed by a study that shows that appraisal actions tend to target mergers with smaller premia.

The crucial question is naturally whether litigation for appraisal rights makes empirical sense for shareholders. Geoffrey Jarvis of law firm Grant and Eisenhofer gives encouraging statistics:⁶ Shareholders who exercise their appraisal rights successfully receive a median increase of 80 percent in their merger consideration. Table 13.1 shows a list of appraisal actions and the premia received. Most actions take two to four years to litigate, and a few cases even run for over a decade. The most crucial problem for the investor is that its investment is tied up for the duration of the legal proceedings.

If successful, the investor will receive interest in addition to the premium. This interest is intended to compensate for the lost time value. Since 2007, the rate in Delaware is the legal rate, which is 5 percent over the Federal Reserve discount rate, as that rate fluctuates during the period from the closing of the merger to the payment of the award. However, investors still face liquidity constraints for the duration of the case. For example, most investment funds have a need for liquidity to pay redeeming investors. Hedge funds may be able to place illiquid positions in side pockets for the duration of the litigation, but this option is not available for open-ended mutual funds. Therefore, open-ended funds are structurally disadvantaged and may find it optimal not to seek appraisal rights even if they have a very strong case and it would benefit their investors.

It is important to note that Table 13.1 shows only appraisal actions that were adjudicated. However, the vast majority of appraisal actions are settled prior to trial. The terms of the settlements are usually kept confidential. Therefore, Table 13.1 provides only a subset of all outcomes of appraisal actions, and most notably those in which the parties were unable or unwilling to compromise. It is possible that this only happens in the most extreme cases of all. If that is the case, then the average appraisal action may result in less spectacular returns than those implied by the statistics shown in the table. What the real impact of settled cases is on the overall economics of appraisal actions may never be known because settlements generally are accompanied by confidentiality requirements so that neither party is allowed to disclose the terms of the settlement. Of course, if one of the parties to the settlement is a public entity with disclosure requirements it can be possible to reverse engineer the terms of the settlement if one reads the footnotes carefully and makes a number of assumptions. The appraisal cases that the author has been involved with were all settled under the condition that the terms of the settlement remain confidential.

A separate problem is the credit risk faced by investors during appraisal proceedings. If the company declares bankruptcy during the appraisal action, the investors become unsecured creditors and may be able to recover only a fraction of their judgment. This problem is particularly acute in leveraged buyouts that use large amounts of leverage to buyout public shareholders.

A better route may be a class action, which we discuss in the next section. The minority squeeze-out of Chaparral Resources' public shareholders by Lukoil saw a group of hedge funds managed by London money manager SISU Capital Ltd., SISU Capital Fund, and SISU Capital Fund II opt out of the class action and instead seek to perfect appraisal rights. The two cases were settled simultaneously after approximately 18 months, with Lukoil paying the same gross per share amount to the public shareholders in the

class action and the funds seeking appraisal. However, the net payment to the two groups was not the same due to the different structure of legal fees and the small number of claims forms submitted by the deadline.

One of the most successful appraisal actions of all time is probably that conducted by Bill Fagan in the 2001 going-private transaction of sandwich chain Quiznos. Public shareholders (including this book's author) were cashed out for \$8.50 per share, but Fagan managed to get \$32.50 per share in the appraisal proceedings. According to data from Jarvis, the record is held by the 1999 action of *Borruso v. Communications Telesystems Intern.*, where the shareholder seeking appraisal received \$0.645 instead of the \$0.02 per-share merger consideration. This represents an increase of over 3,000 percent. But appraisal actions can also work to the disadvantage of shareholders: In an August 2007 decision, Delaware's Leo Strine set the value of shares of The MONY Group, acquired by AXA in 2004, at only \$24.97 per share plus interest for the three years that it took to get to the final decision. For hedge fund Highfields, it was a lot of effort for a disastrous result. AXA had acquired the other shareholders' stock for \$31 per share.

Class Actions

Class action lawsuits have a bad reputation. Martin Lipton, inventor of the poison pill, labels them "a type of extortion."⁷ One of the most prominent law firms that brought the class action format to securities litigation, Milberg Weiss, was indicted, and at least one of its former partners had serve a prison sentence.

Nevertheless, class actions are an option that can be more viable for shareholders in a merger than seeking appraisal rights. Even though the press reports of an explosion of securities litigation, it is a strategy that is underutilized by investors.

There are two types of securities class actions:

1. Lawsuits under Section 10b-5 of the Securities and Exchange Act; these are federal cases.
2. Lawsuits under state law for breaches of state corporation law.

Federal class actions under Section 10b-5 are the ones that are most often caricatured by opponents of shareholder litigation. They usually involve claims of false or misleading statements by the company or its officers that have led to a decline in the share price. Various attempts of reform, such as the Class Action Fairness Act of 2005 and the Private Securities Litigation Reform Act of 1995, have limited abuses of class actions filed in relation to 10b-5 claims. Class actions of this type are of no interest to an activist merger arbitrageur.

Class action litigation under state corporation law, however, is a tool that can help activist merger arbitrageurs maximize the consideration paid in a merger. Mergers are always done pursuant to the corporation laws of the state in which the company is incorporated. Therefore, responsibility for litigation lies with the state. Chapter 8 explained the responsibilities that a board of directors has when selling a company. The most common approach to attack a merger is to find a breach of one of these fiduciary duties and file a class action under state law.

Such a lawsuit can have a number of goals:

- Lawsuits that seek to block a merger
- Lawsuits that seek additional disclosures
- Lawsuits for damages if shareholders believe that their firm has been sold for too little consideration

Legal action to block the sale of a company is hardly ever successful. The courts will weigh whether more damage is done in blocking the sale of a firm than in letting the transaction proceed, and will almost always find that blocking a transaction will cause irreparable harm. Moreover, shareholders who attempt to block a sale do so because they are unhappy with the consideration obtained. Therefore, the court will argue that if there is only disagreement about the price, unhappy shareholders can obtain redress through litigation for damages more easily than through blocking a sale, which would interfere with the ongoing business operations. Motions to enjoin a merger are almost always dismissed. A rare exception was the acquisition of Topps by Michael Eisner. The Delaware court enjoined the transaction, but only to give another buyer, Upper Deck, the opportunity to launch a tender offer for Topps' shares at a premium to Eisner's proposed price. When this tender offer did not come forth, the Eisner transaction closed.

The second type of litigation is quite common and generally successful. Plaintiff attorneys sometimes drive these lawsuits. The proxy or tender offer statements filed with the Securities and Exchange Commission (SEC) often are deficient. This is partly due to the haste with which they are assembled, partly due to negligence. In some instances, companies withhold information deliberately in order to make the transaction look fairer than it actually is.

Lawsuits seeking damages are the most difficult and longest of all. They usually end in a settlement. The fact that a settlement has been agreed on is not at all an indication that the original lawsuit had no merit. Instead, it is often optimal for both sides to settle rather than continue to litigate. For the defendant company, the legal costs can be cut when it settles early rather than fight a lawsuit that it knows it will lose anyway. For the plaintiff, time value of money makes an early settlement more attractive, even if it amounts to a slight discount compared to what could have been obtained at trial.

Securities class actions are filed by a plaintiff who represents all shareholders. A subtle difference between 10b-5 cases and merger litigation based on state law is the choice of a representative plaintiff for the class in federal cases, whereas in state merger litigation the first plaintiff to file will be the representative plaintiff. All shareholders who own stock at the time of the merger will be part of the class and are entitled to a payout from the award or settlement. The submission of claim forms is a requirement for obtaining a payout from a securities class action. When a claim form is submitted, the proceeds of the award or settlement have already been deposited and need only to be distributed to shareholders who submit a claim. For most shareholders, the claim form is submitted by their broker or custodian bank. A claim form is equivalent to the coupons that used to be attached to physical bond certificates and allowed the holder to claim interest payments. Contrary to statements made by industry leaders, including Legg Mason's chief operating officer and general counsel Andrew Bowden,⁸ after the SEC cited firms for failing to claim the proceeds of class actions for their clients, submitting a claim form is not the same as filing a lawsuit, and it does not require a legal determination. Filing a proof of claim is akin to claiming a dividend payment from a company that has declared a dividend.

For an activist arbitrageur, the principal advantage of filing a class action over filing an individual lawsuit lies in the legal fees charged to the plaintiff. If a shareholder files a lawsuit individually against a company, it must pay its own legal fees. Class actions, however, are based on contingency fees that are charged to the entire class, and only in the case of a success. Therefore, an arbitrageur not only does not face an up-front cost but also will not suffer any expense in case the action is unsuccessful. The corollary is that law firms vet these cases very carefully before taking them on to avoid the substantial up-front costs involved. A law firm that agrees to file a merger-related class action typically will retain a valuation expert at its own expense to determine whether the price is fair. This expert, usually a firm specializing in business valuations, will often cost \$100,000. In addition, the law firm incurs costs for depositions and document review, which can add up to another six-figure amount. Due to these high costs, it is unlikely for meritless class actions to be filed against mergers.

Large investors often file individual lawsuits rather than class actions. The contingency fee structure compensating the law firm in a class action is the driver for this decision. Contingency fees are calculated as a percentage of the damages or settlement paid to shareholders. One-third is frequently cited, but actual percentages are often lower. For the holder of a large block of stock who expects to receive many millions of dollars of damages, it can be less expensive to retain a law firm on a retainer plus an hourly rate rather than sharing a large fraction of the proceeds. Because such an arrangement

eliminates the risk for the law firm of not receiving compensation at all if the case is dismissed, the overall cost of litigation is lower. In order to file individually, the shareholder must opt out of a class action if one has been filed.

Opting out of a class action is what SISU Capital Ltd. did in the litigation against Lukoil. SISU filed a separate legal action. Lukoil settled both the class action and SISU's lawsuit simultaneously. The gross proceeds amounted to a 45 percent increase to the \$5.80 offered to shareholders originally by Lukoil. SISU received a settlement of \$2.61 per share, out of which it had to pay its legal costs. Public shareholders who participated in the class action received \$2.38 per share, partly because not all shareholders filed claim forms. Although SISU received \$0.23 per share more than the participants of the class action, it is not clear whether it was worth the effort financially. SISU held 1.3 million shares, so the additional proceeds of \$0.23 per share amount to a total of \$300,000. SISU's legal costs are likely to have exceeded this amount, so that it would have been better off had it not opted out of the class action.

An important aspect of shareholder litigation is the discovery phase, during which plaintiffs' attorneys review internal documents of the company. Discovery can take two forms: Before a trial, discovery is made to uncover all information needed in the trial. Sometimes, a settlement is negotiated and discovery is made afterward to confirm the representations made in the settlement. If the representations turn out to have been untrue, then the settlement will have to be renegotiated, or the case will proceed to trial.

Because of its favorable cost structure, securities class actions are the best method for small investors to defend their interests in mergers in which they are shortchanged. But even large institutions use class actions to obtain fair value in mergers. Some examples of recent actions are:

- Shareholders of Foodarama Supermarkets were paid initially only \$53 per share but stand to receive another \$14 per share after a class action lawsuit against the management buyout group.
- When Restoration Hardware was acquired by management and private equity funds for \$4.50 per share after it spurred a higher bid from Eddie Lampert's Sears Holdings, shareholders received an extra \$0.19 payout through a class action.
- Former shareholders of National Home Health Care Corp., which was acquired by Angelo Gordon in 2007, received an extra payout of \$0.10 per share, or just over one extra quarterly dividend payment, thanks to litigation brought by Helaba Invest Kapitalanlagegesellschaft, an investment advisory subsidiary of state-owned Hessische Landesbank.

It should be noted that securities class actions under Delaware law are heard by a professional judge in the court of chancery, which is a court of

equity that does not provide for jury trials. Indeed, all cases involving corporate law are decided by the court of chancery, so that decisions tend to be expert and consistent.

Inspection of Books and Records

Activist shareholders have the right to inspect the books and records of a corporation. All states have such statutes. Under Delaware law, any shareholder can inspect the books and records. Other states have more stringent requirements. Texas and Nevada, for example, award this right only to 5 percent shareholders or those investors who have held their shares for at least six months. In Delaware, the right to inspect books and records is also available to beneficial owners, which are those who hold their shares through a brokerage account.

Requests to inspect books and records are often referred to as “220 requests,” after Section 220 of Delaware General Corporate Law, which specifies the procedure to be followed:

- (b) *Any stockholder, in person or by attorney or other agent, shall, upon written demand under oath stating the purpose thereof, have the right during the usual hours for business to inspect for any proper purpose, and to make copies and extracts from:*
 - (1) *The corporation’s stock ledger, a list of its stockholders, and its other books and records; and*
 - (2) *A subsidiary’s books and records [...]*
- (c) *If the corporation, or an officer or agent thereof, refuses to permit an inspection sought by a stockholder or attorney or other agent acting for the stockholder pursuant to subsection (b) of this section or does not reply to the demand within 5 business days after the demand has been made, the stockholder may apply to the Court of Chancery for an order to compel such inspection. [...] Where the stockholder seeks to inspect the corporation’s books and records, other than its stock ledger or list of stockholders, such stockholder shall first establish that:*
 - (1) *Such stockholder is a stockholder;*
 - (2) *Such stockholder has complied with this section respecting the form and manner of making demand for inspection of such documents; and*
 - (3) *The inspection such stockholder seeks is for a proper purpose.*

Where the stockholder seeks to inspect the corporation’s stock ledger or list of stockholders and establishes that such

stockholder is a stockholder and has complied with this section respecting the form and manner of making demand for inspection of such documents, the burden of proof shall be upon the corporation to establish that the inspection such stockholder seeks is for an improper purpose. [...]

- (d) *Any director (including a member of the governing body of a nonstock corporation) shall have the right to examine the corporation's stock ledger, a list of its stockholders and its other books and records for a purpose reasonably related to the director's position as a director.*

8 Del. C. § 220

If a company refuses a request and a shareholder files a lawsuit, as described in Section 220(c), Delaware courts will try the demand expeditiously within a few months. Shareholders almost always win these cases. However, there are a few exceptions where courts routinely deny access to books and records. Most important, shareholders do not have the right to inspection to determine whether to tender shares in a tender offer. The rationale is that the tender offer statement should contain all the information required to take that decision. If the tender offer statement is defective, then shareholders have a basis to sue for additional disclosures.

Typical reasons for demanding books and records include the launch of a proxy fight or preparation for a resolution to be brought to the annual meeting, examination of the independence of directors, communication with other stockholders regarding a stockholder class action against the corporation, and communication with other stockholders to encourage them to dissent from a merger and seek appraisal. Investigation of suspicion of mismanagement is also an acceptable reason as long as the shareholder has a “credible showing, through documents, logic, testimony or otherwise that there are legitimate issues of wrongdoing.”⁹

The shareholder can inspect all documents that are essential and sufficient for the request. The court can curtail the scope of documents that must be produced in order to protect the company from excessive costs. A confidentiality agreement usually is required from the shareholder before inspection.

Activist merger arbitrageurs cannot use 220 requests to obtain documents for a tender offer but can use it for related purposes—for example, if the tender offer is canceled or a merger collapses. An investigation of the independence of directors on the special committee should also be a valid reason for a 220 request, and in some mergers, questions about directors' independence do indeed arise.

PUBLIC OPPOSITION

Shareholder activism is associated with shame campaigns held by activists to embarrass management. These campaigns generate headlines and become known to the public. This is, of course, the goal of these campaigns. The headlines will be read by clients, employees, and friends and family of the chief executive officer (CEO). If an activist can generate enough publicity around embarrassing details of management failures, the CEO be avoided in the local country club. The goal of the activist is that once the shame factor becomes sufficiently large, management eventually will yield to its demand.

Public opposition is an uphill battle that is not often successful. The low success rate is caused partly by the difficulty that shareholders face in rallying opposition and partly by the lack of follow-up of many activists who oppose transactions but run ineffective campaigns or do not even follow through with a campaign.

A campaign to oppose an acquisition takes two forms: In a merger, the activist must wage a proxy campaign to minimize the number of shares voting in favor, whereas in a tender offer, the activist must convince shareholders not to tender their shares.

Proxy Campaigns

In mergers, activists are at a disadvantage to management. The favorite tool used by management to pass a merger proposal is the postponement of the shareholder meeting. This allows management first of all to gather additional votes. These votes are collected by proxy solicitors who call shareholders, sometimes even retail accounts that hold only a few hundred shares, and ask the investors to vote over the telephone in favor of the merger. If this is still insufficient, management can reset the record date that allows shareholders to vote. If more arbitrageurs who support the transaction have acquired shares after the original record date, then the likelihood of gathering sufficient votes increases.

Activists that seek proxies to oppose a transaction face a number of obstacles. First, the cost of running a proxy contest can be significant. Many observers give numbers well into the six figures. This is definitely the case when a proxy solicitation firm is retained. In the absence of a proxy solicitation firm, campaigns can be run at a much lower cost, but the activist has to design a campaign carefully to ensure its effectiveness. The principal cost is the printing and distribution of the proxy materials to shareholders. Most investors hold their shares through Cede & Co., and these shareholders are serviced by Broadridge (formerly ADP). The processing fee is approximately \$1 per account in addition to materials, printing, and postage. Due to new

SEC regulations allowing electronic delivery of proxy materials, it should be possible to run campaigns at very low cost. As mentioned before, the critical factor for a successful campaign will be its planning, and not the retention of a proxy solicitor.¹⁰ Unfortunately, Broadridge designs its proxy ballot forms in a way that makes them confusing to investors. In uncontested elections, the control number, a reference number needed to vote, is displayed prominently in a box with a red border. In contested elections, however, the dissidents' proxy forms tend to be cluttered with text, and the control number is not displayed prominently. This places the activists at a slight disadvantage.¹¹ In close contests, this disadvantage can make the difference between winning and losing.

Withholding Shares in Tender Offers

Withholding shares in tender offers usually is more difficult to do than a campaign in a merger, where the activist asks shareholders to vote against the transaction. A shareholder who does not tender will be at a disadvantage if the minimum tender condition is satisfied: The shares will become illiquid and it may take several weeks until the second step of the transaction is completed and the investor is cashed out. In the meantime, the shareholder not only has an illiquid investment, possibly relegated to the pink sheets, but also loses the time value of money. In contrast, in a merger, the company will continue to exist and the shareholder is not forcefully cashed out in a disadvantageous way.

A rare instance where opposition to a tender offer gained traction is the attempted acquisition of Longs Drug Stores by CVS Caremark in 2008. A key factor in the success of the opposition was the number of unhappy shareholders: Hedge funds Advisory Research and Pershing Square owned a combined 18 percent of Longs, and CtW Investment Group representing several unions also opposed the transaction. This gave the opposition a large enough block of shares to make a credible case against tendering. In addition, the opposition generated significant publicity, which caused other investors to follow them into not tendering. Their credibility was enhanced further when they convinced Walgreens to partner with two commercial real estate investment trusts and submit an acquisition proposal. As a result, at the first expiration of the tender offer, less than 4.5 percent of all outstanding shares had been tendered.

Investing in Arbitrage

This chapter looks at a number of practical aspects of investing in merger arbitrage strategies. Some topics have been touched on earlier, such as short selling and leverage. Risk management is an area that has not yet been discussed. Despite its exponential growth in finance in general, the tools used in merger arbitrage are still rudimentary. Finally, different vehicles that investors can utilize to participate in merger arbitrage strategies are discussed.

TRADING VERSUS INVESTING

Merger arbitrage investments are held for a short period of time. As we saw in Chapter 5, the average time for the closing of a merger is 128 days. This short holding period qualifies merger arbitrage as a short-term trading strategy by the standards of most investors. For ultra-short-term traders who hold positions for a few days only or even as little as a few minutes or seconds, the time horizon of merger arbitrage is long. Most investors, however, have longer horizons and will consider merger arbitrage a short-term or trading strategy.

The short-term nature of merger arbitrage investing has implications on taxes, which have been discussed in Chapter 5. Merger arbitrage will generate primarily short-term gains and hence will be tax-inefficient. Many institutional investors are pension funds or endowments that are exempt from taxes and do not put much weight on the tax characteristics of merger arbitrage. Taxable individuals, however, often prefer to invest in the strategy through tax-deferred vehicles such as individual retirement accounts (IRAs), variable annuities, or private placement life insurance. The flip side of benefiting from the tax deferral of these vehicles is that the investment must be held long enough for the compounding on the deferral to work as intended. Therefore, an investment in the strategy requires a commitment in the context of an asset allocation strategy. It is not suitable for investors who are chasing after the latest hot strategy. Unfortunately, the nature of financial market is such that asset classes go through cycles and perform

well sometimes while underperforming at other times. Merger arbitrage is no different. The market correction in late 2008 is a good example of how short-term cycles can affect merger arbitrage as a strategy. Sharp drawdowns were experienced in 1998, when investors dropped merger arbitrage, only to pile back into the strategy shortly thereafter. Investors who make such tactical withdrawals should have a clear idea of when to reenter the strategy. This is, of course, true not just for merger arbitrage but for any investment. If investors exit simply out of panic and enter for the same reason (more commonly called *chasing returns*), then they are effectively pursuing a strategy of selling low and buying high.

The asymmetric payoff of merger arbitrage makes the evaluation of a manager more complex than more traditional strategies with a symmetric payoff profiles. As discussed on several occasions in this book, merger arbitrage has a high probability of producing a small payoff and a small probability of generating a large loss. An aggressive investor therefore can be tempted to take large risks, because the probability of loss is low. For an outside investor, it is difficult if not impossible to estimate why these risks have been taken: Is the manager an aggressive risk taker or a compulsive gambler? In the author's experience, both personality types gravitate toward the financial markets, and in particular to short-term trading strategies. It is possible to distinguish between the two types only if one makes a deliberate effort to understand the thought process behind each investment decision. Even then, one must be well familiar with each investment to distinguish between empty financial phraseology and actual thoughtful decisions. It should be noted that this dilemma arises not just in evaluating merger arbitrage manager, but many other investment strategies as well, where payoff profiles are asymmetric. The optionality that is sometimes embedded in strategies can be next to impossible to detect for outside investors.

Many institutional investors have developed elaborate due diligence procedures with due diligence questionnaires (DDQs), manager interviews and onsite visits that are supposed to standardize the selection of investment managers to whom they allocate assets. The risk with these processes is that they become too formulaic so that a clever compulsive gambler will not find it difficult to game the selection process. Check-box investing is necessary if decisions are taken by committee. Unfortunately, it has become widespread, and many institutions will pay the price for this overly simplistic decision making. In my own experience in dealing with due diligence teams at various institutional investment firms, I have found a wide range of expertise that, in some cases, can be highly detailed and question the rationale of specific investments, sometimes going back several quarters in the past.

LEVERAGE AND OPTIONS

Merger arbitrage is a low-volatility strategy. As such, it lends itself to the use of leverage to boost returns, as is commonly done with other low-volatility strategies. Because leverage is a double-edged sword, amplifying both returns and losses, it is risky to use on investment strategies that produce widely fluctuating returns.

Arbitrageurs have two main sources of leverage: the use of derivatives and borrowing. Borrowing can be done either through margin loans from a broker, which is the most common form of borrowing for hedge funds, or through loans. These forms of leverage were discussed in Chapter 5. Derivatives provide more flexibility to managers seeking leverage than margin loans. Not only can the implied interest rate be more favorable, because derivatives are priced using the risk-free rate rather than the (presumably much higher) actual funding rate that is available to the arbitrageur, but also the leverage that can be achieved is much higher. Margin loans are constrained by Regulation T, as described in Chapter 5. Derivatives can provide much higher levels of leverage. Leverage is constrained only by any collateral required by the counterparty, if any.

Single stock futures have been offered by OneChicago, a joint venture of the Chicago Board Options Exchange and the Chicago Mercantile Exchange, since 2002. Single stock futures are similar to other financial futures in that they are cash settled. They require an initial and maintenance margin of only 20 percent of the underlying and thus offer higher leverage than what can be achieved through a margin loan. In addition, certain positions can be used to offset each other, for example calendar spreads. Each contract is offered on an underlying of 100 shares. However, these futures contracts are offered only on a limited number of stocks. At the time of writing, single stock futures were available on approximately 900 underlying stocks. Liquidity is also a problem: In mid-2015, the aggregate daily volume on all of these contracts on the OneChicago exchange only occasionally exceeded 100,000 and on some days barely exceeded a mere 10,000. This is equivalent to trading of not even 1 million shares. In comparison, the daily volume on each of the New York Stock Exchange and the NASDAQ amounted to several billion shares over the same period.

Options are another source of leverage. Options have already been discussed in Chapter 5 in the context of call writing to enhance returns. Arbitrageurs can also purchase calls to obtain additional leverage. Implied volatilities fall significantly after the announcement of a merger, so that option premia become affordable despite the tight spreads. An arbitrageur

probably will acquire in-the-money options to mimic long positions and in-the-money puts for short positions, because they have the highest deltas.

The pricing of options of stocks in a merger is more difficult than that of options on other stocks. The standard model to calculate prices of financial options on stocks is the Black-Scholes model. One of its crucial underlying assumptions is the continuous movement of prices. For stocks that are going through a merger, prices will go through sudden and instantaneous jumps when a merger is called off. The stock will suffer a sharp correction (or a short squeeze in the short leg of a stock-for-stock merger) that is discontinuous. The risk of such a sudden jump in prices is not captured correctly by the Black-Scholes model. A model that captures this effect was developed by Ajay Subramanian.¹ It uses a jump diffusion process rather than the continuous diffusion, also called Brownian motion, of the Black-Scholes framework. Subramanian examines options on stocks undergoing stock-for-stock mergers and starts with jump diffusion processes of the form

$$\begin{aligned} dS_1(t)1_{N(t)=0} &= 1_{N(t)=0}[(\mu_1(t-) - d_1)S_1(t-)dt + \sigma'_1 S_1(t-)dW_1(t)] \\ dS_2(t)1_{N(t)=0} &= 1_{N(t)=0}[(\mu_2(t-) - d_2)S_2(t-)dt + \sigma'_2 S_2(t-)dW_2(t)] \end{aligned} \quad (14.1)$$

where

S_1, S_2 are the prices of the stocks.

μ_1, μ_2 are the drifts of the diffusion processes.

σ'_1, σ'_2 are the respective volatilities.

$1_{N(t)=0}$ is 1 before the jump. $1_{N(t)=1}$ is 1 after a jump, if any.

$t-$ is a notation for the time just prior to t .

d_1, d_2 are the respective dividend yields.

dW_1, dW_2 are random draws as in a Brownian motion.

If the merger is called off, the stocks will revert to a standard Black-Scholes process:

$$\begin{aligned} dS_1(t)1_{N(t)=1} &= 1_{N(t)=1}[(\mu_1(t-) - d_1)S_1(t-)dt + \sigma_1 S_1(t-)dW_3(t)] \\ dS_2(t)1_{N(t)=1} &= 1_{N(t)=1}[(\mu_2(t-) - d_2)S_2(t-)dt + \sigma_2 S_2(t-)dW_4(t)] \end{aligned} \quad (14.2)$$

where

σ_1, σ_2 are the respective volatilities after the jump.

dW_3, dW_4 are random draws as in a Brownian motion.

Subramanian derives a closed-form solution for the price of a European call option, which is significantly more involved than the classic

Black-Scholes equation:

$$\begin{aligned}
 P_1(0, T_0, K) = e^{-\lambda T_0} \left\{ S_1(0) e^{-d_1 T_0} \frac{e^{-\lambda T_0} + A_1}{1 + A_1} N(\alpha'_1) - K e^{-r T_0} N(\alpha'_2) \right\} \\
 + \frac{\lambda S_1(0) e^{-d_1 T_0} e^{\frac{\lambda \sigma^2 T_0}{\sigma'^2 - \sigma^2}} A_1}{(1 + A_1)(\sigma'^2 - \sigma^2)} \int_{\sigma^2 T_0}^{\sigma'^2 T_0} dt e^{-\frac{\lambda t}{\sigma'^2 - \sigma^2}} N\left(\frac{x + 0.5t}{\sqrt{t}}\right) \\
 - \lambda K e^{-r T_0} \frac{e^{\frac{\lambda \sigma^2 T_0}{\sigma'^2 - \sigma^2}}}{(\sigma'^2 - \sigma^2)} \int_{\sigma^2 T_0}^{\sigma'^2 T_0} dt e^{-\frac{\lambda t}{\sigma'^2 - \sigma^2}} N\left(\frac{x - 0.5t}{\sqrt{t}}\right) \quad (14.3)
 \end{aligned}$$

where

$$x = \log \left[\frac{S_1(0)(a_1)}{K(1+A_1)} \right] + (r - d_1)T_0.$$

A_1, A_2 are chosen so that the stock jumps by a factor. $\beta_i(t) = A_i \exp t(-\lambda t)/(1 + A_i \exp(-\lambda t))$ if the deal is called off.

λ is the risk-neutral probability that the deal is called off in the period $[t, t+dt]$ is λdt .

The integrals can be replaced by

$$\begin{aligned}
 \int_0^\tau dt e^{-\omega t} N\left(\frac{x + \rho t}{\sqrt{t}}\right) &= \frac{1}{\omega} \left\{ \frac{1 + \operatorname{sgn}(x)}{2} - e^{-\omega t} N\left(\frac{x + \rho t}{\sqrt{\tau}}\right) \right\} \\
 + \frac{e^{(\rho - \xi)x}}{2\omega} N\left(\frac{x - \xi t}{\sqrt{\tau}}\right) &+ \frac{e^{(\rho + \xi)x}}{2\omega} N\left(\frac{x + \xi t}{\sqrt{\tau}}\right) - \frac{e^{(\rho - \xi)x} + e^{(\rho + \xi)x}}{4\omega} (1 + \operatorname{sgn}(x)) \\
 + \frac{\rho e^{(\rho - \xi)x}}{2\xi\omega} N\left(\frac{x - \xi t}{\sqrt{\tau}}\right) &- \frac{\rho e^{(\rho + \xi)x}}{2\xi\omega} N\left(\frac{x + \xi t}{\sqrt{\tau}}\right) \\
 + \frac{\rho(e^{(\rho + \xi)x} - e^{(\rho - \xi)x})}{4\xi\omega} &(1 + \operatorname{sgn}(x)) \quad (14.4)
 \end{aligned}$$

where

$$\xi = \sqrt{2\omega + \rho^2}$$

Subramanian uses these formulas to invert the problem: Rather than calculating option prices, he uses option prices as the input to derive the implied probability that a merger closes. His results, shown in Table 14.1,

TABLE 14.1 Implied Probabilities of the Closing of Mergers Derived from Option Prices

Successful Deals							Unsuccessful Deals								
Target	Acquirer	Average Success Probability (First Third)		Average Success Probability (Middle Third)		Average Success Probability (Final Month)	Overall Average	Target	Acquirer	Average Success Probability (First Third)		Average Success Probability (Middle Third)		Average Success Probability (Final Month)	Overall Average
		Third	Third	Third	Third					Third	Third	Third	Third		
DS	MXIM	0.48	0.64	0.79	0.74	0.61	0.61	NTPA	PROX	0.33	0.29	0.26	0.29	0.3	0.3
TOS	P	0.56	0.79	0.95	0.91	0.81	0.81	PRXL	CVD	0.25	0.19	0.3	0.26	0.25	0.25
CATP	NOVL	0.79	0.8	0.95	0.93	0.86	0.86	AZA	ABT	0.29	0.43	0.41	0.44	0.38	0.38
CIT	TYC	0.4	0.63	0.74	0.74	0.58	0.58	NR	TBI	0.27	0.3	0.49	0.46	0.35	0.35
BBC	AAS	0.38	0.44	0.57	0.6	0.43	0.43	CYM	AR	0.3	0.25	0.49	0.49	0.36	0.36
KNT	AVNT	0.6	0.65	0.76	0.74	0.68	0.68	WLA	AHP	0.01	0.05	0.07	0.08	0.04	0.04
AZA	JNJ	0.81	0.85	0.95	0.94	0.87	0.87	GLIA	GLFD	0.15	0.47	0.52	0.51	0.37	0.37
SEM	VSH	0.49	0.58	0.79	0.77	0.59	0.59	REL	LUK	0.49	0.47	0.6	0.53	0.52	0.52
WB	FTU	0.43	0.68	0.86	0.91	0.68	0.68	FSCO	ZION	0.18	0.22	0.09	0.11	0.17	0.17
NIS	USB	0.69	0.93	0.98	0.97	0.87	0.87								
SAWS	TQNT	0.44	0.6	0.69	0.64	0.57	0.57								
MRL	PDE	0.38	0.61	0.76	0.77	0.55	0.55								
HM	ABX	0.4	0.57	0.71	0.82	0.58	0.58								
DRMD	BRL	0.25	0.42	0.59	0.58	0.38	0.38								
GEN	TER	0.44	0.49	0.63	0.62	0.52	0.52								
W	MEA	0.47	0.6	0.79	0.79	0.61	0.61								
CPQ	HWP	0.16	0.23	0.58	0.77	0.33	0.33								
GLM	SDC	0.33	0.47	0.65	0.64	0.51	0.51								
COC	P	0.29	0.35	0.58	0.82	0.41	0.41								
AVIR	MEDI	0.68	0.79	0.94	0.85	0.83	0.83								
CORR	MLNM	0.5	0.56	0.72	0.67	0.58	0.58								
AVNT	SNPS	0.25	0.46	0.62	0.74	0.44	0.44								
SRM	TYC	0.85	0.85	0.93	0.91	0.87	0.87								
SCI	SNM	0.29	0.45	0.67	0.73	0.45	0.45								
Mean		0.47	0.6	0.75	0.76	0.6	0.6			0.25	0.3	0.36	0.35	0.3	0.3
Median		0.44	0.6	0.75	0.77	0.58	0.58			0.27	0.29	0.41	0.44	0.35	0.35
q	Max	0.83	0.91	0.96	0.98										

Source: Ajay Subramanian, "Option Pricing on Stocks in Mergers and Acquisitions," *Journal of Finance* 59, no. 2 (April 2004).

show that the options market sets probabilities of the closing of mergers that are good predictors of the actual outcome. The time between announcement and anticipated closing is split into three periods. In each of these periods, the implied probabilities of the options are averaged. The average for the final month before closing or cancellation of the deal is also shown. For successful deals, the average probability implied by the options is twice as high as that for deals that ultimately are successful.

This result is consistent with other studies that have found that mergers that close have narrower spreads than those that eventually collapse.

Some of the highest leverage can be achieved through the use of swaps. A total return swap allows an arbitrageur to obtain exposure to an asset without taking possession. As discussed previously, margin borrowing can be expensive, in particular for smaller arbitrageurs or entities that are highly leveraged. A total return swap allows an arbitrageur to borrow the funding capability of a large investment bank or dealer and pay a much smaller spread on the reference rate than if it had taken out a margin loan. The structure of a total return swap resembles that of other swap contracts, such as interest rate swaps. It has two legs: a funding leg and a return leg. In the terminology of total return swaps, the party that receives the return leg, which is the return on the underlying asset, is the buyer. The seller pays the return on the asset. In exchange, the buyer pays the seller a funding cost, which is a spread over the London Interbank Offered Rate (LIBOR). In addition, the buyer pays the seller any depreciation of the underlying assets. The net effect of these cash flows is that the buyer pays the cost of funding and receives any appreciation and dividends on the underlying. If the underlying loses value, the buyer pays the seller.

Sellers of total return swaps are broker/dealers that hedge themselves by acquiring the underlying assets. Therefore, an arbitrageur who acquires a total return swap gets the benefit of paying LIBOR plus a modest spread rather than a higher margin rate.

Contrary to some misinformation that circulates in the media and also literature about the financial crisis, swaps are not an unregulated wild west. In practice, swaps can only be executed by parties that have executed an ISDA agreement between each other. ISDA agreements are standardized and so is the vast majority of swap contracts. Although it is possible to execute a swap with nonstandard terms, this is rarely done. Swaps outside of an ISDA agreement are no more than a hypothetical scenario. A bigger concern, from the point of view of an arbitrageur, is the difficulty of obtaining an ISDA agreement. The number of banks that offer this service has shrunk in the wake of the financial crisis, and those that continue to offer this service do so only for counterparties that promise to generate substantial business,

so that smaller arbitrageurs will find it difficult to impossible to use this type of derivative.

Similar levels of leverage can be achieved through contracts for difference (CFD). However, for regulatory reasons, these instruments are not available in the United States at this time.

It is well known to financial practitioners as well as academics that the use of leverage is a double-edged sword. Not only does it amplify positive returns, but it also increases losses. An aspect of leverage that is less well known in academic circles is that the combination of leverage and short selling introduces costs that are a drag on returns. This problem is especially acute for 130/30 strategies. These are investment strategies where 100 percent of the assets are invested in an index, 30 percent are sold short, and an additional 30 percent are invested in long positions. The combination of 30 percent short/30 percent long is supposed to add returns that are independent of the direction of the market and add to the return achieved from the index component.

The academic literature regarding these strategies assumes that the proceeds from the short sales are used to acquire the long position. This is not possible because most brokers do not allow an investor to access all of the proceeds from a short sale. Figure 14.1 illustrates this problem. At least some fraction of the proceeds of the short sale must remain at the broker in cash and cannot be invested. The broker will, of course, pay interest in the form of a short rebate (to be discussed; see also Chapter 5) on the cash balance of short proceeds. Nevertheless, the investor cannot access these funds to purchase additional securities. Therefore, sufficient funds must be borrowed to compensate for the unavailability of the funds retained by the broker. The investor needs to pay a higher rate of interest on the amounts borrowed than received through the short rebate. This is a net cost of the long/short component that must be offset through investment gains. Therefore, even before any gains are made, the long/short component will impose a cost on the fund. This cost also can be viewed as a negative alpha built into the long component of the strategy.

Some simple calculations can illustrate the extent of a negative alpha. It is determined by three factors:

1. The amount of leverage used
2. The fraction of the short sale proceeds that the short broker allows the arbitrageur to access for purchases
3. The interest rate differential between the short rebate and the borrowing cost.

Table 14.2 shows various levels of negative alpha for different levels of these three variables.

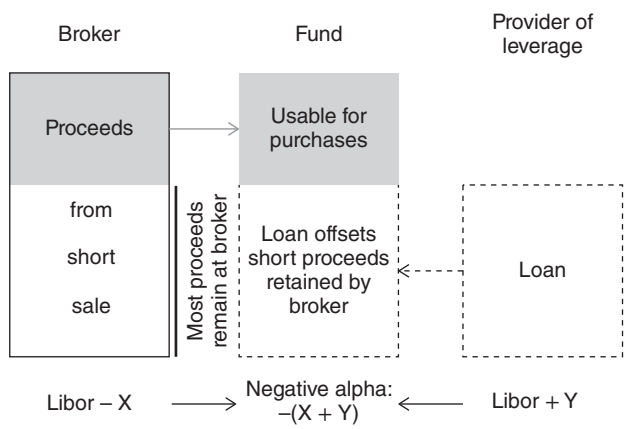


FIGURE 14.1 Leverage Coupled with Short Selling Leads to Negative Alpha

TABLE 14.2 Negative Alpha for Different Levels of Leverage, Interest Rate Spreads, and Withdrawal Levels from the Brokerage

Short Proceeds Retained by Broker				
20% leverage Spread		30%	50%	100%
	1.00%	0.06%	0.10%	0.20%
	2.00%	0.12%	0.20%	0.40%
	5.00%	0.30%	0.50%	1.00%
Short Proceeds Retained by Broker				
30% leverage Spread		30%	50%	100%
	1.00%	0.09%	0.15%	0.30%
	2.00%	0.18%	0.30%	0.60%
	5.00%	0.45%	0.75%	1.50%
Short Proceeds Retained by Broker				
50% leverage Spread		30%	50%	100%
	1.00%	0.15%	0.25%	0.50%
	2.00%	0.30%	0.50%	1.00%
	5.00%	0.75%	1.25%	2.50%

Merger arbitrageurs face the same challenge when using leverage to finance a portion of the long/short component of their arbitrage portfolio. In a stock-for-stock merger, they cannot utilize all of the proceeds from the short sale for purchasing the long leg of the arbitrage. If they leverage, they must borrow these funds. Their arbitrage position will experience the same type of negative alpha just described.

SHORTING STOCKS

The shorting of stock is generally regarded as a high-risk activity and sometimes is associated with illegal activities. There is no doubt that short selling exposes the seller to potentially unlimited losses on the short. The short seller takes the opposite position of a buyer; while the buyer has the potential for unlimited gains on their holding, the short seller faces the opposite risk. Short selling as a stand-alone investment strategy is indeed a risky undertaking that is best left to investors who master this discipline well.

Since the stock market goes up most of the time, a simple short position is more likely to generate losses than gains. Returns on funds that specialize in short selling only confirm the difficulty of making a profit on this strategy. Table 14.3 shows the returns of the HFRI Equity Hedge Short Biased Index

TABLE 14.3 Performance (percentage per calendar year) of Short Biased Hedge Funds According to HFRI

Year	Return (%)
2014	(3.89)
2013	(18.60)
2012	(17.24)
2011	0.35
2010	(18.01)
2009	(24.03)
2008	28.41
2007	4.72
2006	(2.65)
2005	7.28
2004	(3.83)
2003	(21.78)
2002	29.17
2001	8.99
2000	34.63
1999	(24.40)
1998	(0.54)
1997	3.86
1996	(4.00)
1995	(17.14)
1994	18.53
1993	(7.50)
Average	(2.66)
S&P 500 Total Return	9.45

Source: Bloomberg, HFRI.

of short-selling hedge funds. On average, these funds had a negative performance, with an average annual return of -2.66 percent compared to an average annual return of 9.45 percent for the Standard & Poor's (S&P) 500 index. Some observers unfamiliar with arbitrage strategies may argue based on these numbers that using short selling is a losing strategy. However, when short selling is used as an element of a more complex strategy, such as merger arbitrage, comparisons to pure short selling are not relevant. The short position changes its character from a bet on the drop of a stock price to an attempt to capture a price differential.

A short seller is required to deliver the shares that have been sold to the buyer. The buyer is not concerned with whether the purchased shares have been sold by someone who held the stock or who sold it short. The buyer simply expects to obtain the acquired shares. Many institutional investors, including public pension funds and endowments, lend their shares to short sellers and charge a fee for that service. In most cases, the actual lending is done not by the institution itself but by the custodian. A securities lending agreement stipulates whether the custodian must obtain permission from the institution before lending the shares, or whether the shares can be lent on a discretionary basis without prior approval.

Lenders receive a fee from the borrower. Table 14.4 shows the fees charged and returns achieved by lenders of securities in the first quarter of the year 2014. In the table, bp stands for basis points, which represent 0.01 percent.

TABLE 14.4 Fees and Returns Earned by Lenders of Securities

Asset Class	Lendable Assets (US \$m)	Total Balance (US \$m)	Utilization (%)	Securities Lending Fee (bp)	Securities Lending Return to Lendable (bp)	Total Return to Lendable (bp)
Asian Equity	394,636.2	31,318.4	5.85	119.21	6.82	6.93
Of which Australia	217,052.6	14,464.2	5.26	52.30	2.65	2.74
USA Equity	5,299,961.9	383,031.41	5.22	63.04	3.24	3.78
Of which S&P 500	4,053,935.3	181,587.0	3.11	10.95	0.42	0.84
Western Europe Equity	1,505,513.6	110,883.7	4.19	68.20	3.41	3.47
Of which UK Equity	789,305.0	31,672.2	3.16	35.66	1.20	1.25

Source: *Securities Finance Review / Q1 2014: Spring Cleaning* (London: markit, May 7, 2014).

Most arbitrageurs that sell short do not borrow shares directly from a lender but instead rely on their broker to borrow the shares either out of their clients' inventory or from other sources. Brokers usually borrow from other sources only if the size of the trade is large enough to make doing so economical. An arbitrageur who borrows shares from the broker does not normally pay a lending fee. Instead, the cost of lending is incorporated into the short rebate in the form of a lower rebate. Only hard-to-borrow shares command extra fees.

Short rebates vary widely and are subject to negotiation. Most retail brokerage firms pay their customers no short rebate at all. One such firm, Interactive Brokers, pays a rate based on the Fed Funds rate, and charges between Fed Funds minus 0.25 percent and Fed Funds minus 1.25 percent, depending on the dollar balance of short proceeds. The section about leverage in this chapter has a more detailed discussion of the impact of the short rebate on the use of leverage. Merger arbitrageurs who want to generate extra income also can take the opposite side and lend out shares that they hold as part of the arbitrage. The income generated thereby can offset some of the borrowing costs. Many arbitrageurs will forgo this additional revenue in order to maintain voting control over the shares that are subject to a merger. When shares are lent out, the ultimate holder of the shares will exercise the voting rights, not the original owner who has lent them. For an arbitrageur who wants a merger to happen, it is more critical to vote in favor than to generate additional revenue. The larger the position, the more relevant this consideration becomes.

The borrowing of shares also can be used to acquire votes beyond the actual number of shares owned. An investor can borrow shares with the sole intent of voting them. The cost of borrowing is minimal in most instances; however, the upside of influencing the outcome of such a vote can be considerable. One of the most prominent examples of such "empty voting" occurred during the failed merger of King Pharmaceuticals and Mylan Laboratories in 2005. Hedge fund Perry Corp. owned shares of King, which had risen following the news of the merger. Perry acquired 9.9 percent of Mylan and hedged all its exposure to the stock price. Therefore, Perry² had voting rights to Mylan's stock but no economic interest. Perry could have pushed Mylan to pay a higher price for King. The transaction unraveled following the revelation of accounting problems at King, so that Perry's strategy was never tested in practice. However, it has led to calls by Securities and Exchange Commission (SEC) official for action on *empty voting*. Because the SEC does not want to disrupt the securities lending markets, no action had been proposed by the time of writing, but it is likely that this area will be regulated in the future.³

The SEC has issued a rule that governs all short sales, Regulation SHO. It became mandatory in January 2005. This rule forbids brokers from entering

into short sales on behalf of a client unless the stock to be shorted has been borrowed previously. Many brokers will handle both the borrowing and the execution of the short sale. Execution-only brokers now require confirmation from arbitrageurs that the stock has been borrowed (or located for borrowing) prior to placing a short sell.

Short sellers will cover their position only if they cannot borrow the shares from another lender. Under normal market conditions, there are many willing lenders of stock. However, in some instances, an individual stock can be shorted heavily, and only few shares are available to be borrowed. Such stocks are at risk of going through a short squeeze. An arbitrageur who shorts a stock that goes through a short squeeze will suffer a loss, albeit temporarily. The problem with such a loss is that at some point, the arbitrageur will feel compelled to cover the short position to avoid further losses. Unless the arbitrageur is lucky or unusually skilled in timing the market, it is unlikely that it will be possible to reenter the short position at a more favorable level. Market movements in short squeezes are very rapid. The most prominent example of a short squeeze was the increase of Volkswagen (VW) ordinary shares following the revelation that Porsche SE had acquired control over 75 percent of the shares. With 20 percent held by the state of Lower Saxony, the free float amounted to only 5 percent, while short positions were estimated to amount to 15 percent. Within two days, VW's stock price increased from €210 to as much as €1,000. Cumulative losses to short sellers were estimated to amount to €15 billion. It should be noted that the short sellers were for the most part arbitrageurs who had attempted to arbitrage the wide spread between VW's ordinary and preferred shares.

Retail investors usually do not have to worry about borrowing stock themselves. Their clearing broker gives them access to their clients' inventory and will reject orders to sell short if there is insufficient inventory. The direct access to substantial inventory sometimes can give retail investors an edge over institutions when dealing in hard-to-borrow stocks. Retail brokers may have a small number of shares available that are too few to be shown to the street but are still available to their lucky clients.

A short sale in which the arbitrageur is not able to deliver the stock is referred to as a naked short and is illegal. Nevertheless, occasionally naked short sales can happen as trade errors, but this should be an exception and should not occur with any regularity. It has been alleged by anti-short-selling activists and some politicians that some market participants use foreign exchanges to skirt Regulation SHO. Arbitrageurs should refrain from such activities, which are bound to unwind at the time of the closing of the merger. In July 2008, the SEC reiterated Regulation SHO through an emergency order that prohibited naked shorting for equity securities of 19 financial firms.

By issuing this list, the SEC intended to prop up shares of financial companies that had dropped precipitously in the previous weeks. Although this emergency ruling was hailed widely as a tough measure, it merely reiterated the existing prohibition against naked short sales under Regulation SHO. Its impact was more psychological than logical, sending a message that short sellers might face regulatory scrutiny. It worked as intended and led to a rally in financial stocks as short sellers covered their positions in a squeeze. Nevertheless, the effectiveness of the list is at best dubious. Many of the companies listed are not even based in the United States and their principal trading exchange is located in Asia or Europe and does not fall under the purview of the SEC. A short seller who is not subject to SEC oversight, such as a London-based hedge fund, would be able to engage in unlimited naked short selling without violating the SEC's order.

A study conducted shortly after the ban of short selling showed that the effect of the ban was a deterioration of the market quality in the affected stocks.⁴ This led to a sharper decline in their stock prices than short selling would have. The study analyzed a number of different metrics to determine the effect of the emergency order.

The study started by noting that short selling the 19 stocks on the list had been comparable to that of other financial companies between 2006 and 2008. When controlling for firm and market characteristics, the author, Arturo Bris, found that there had been less short selling for most stocks on the list than for other financial companies. An important difference between the 19 stocks and other financial companies is the propensity of the firms on the list to issue convertible bonds. Many convertible bonds are acquired by arbitrageurs who hedge the conversion feature by selling short stock. As a result, on an absolute level, there is more short selling in these stocks. This higher absolute level is not evidence of bearish activity but of convertible arbitrage that takes no view about the direction of a company's stock.

More important, the SEC's action led to a deterioration of the market quality in the stocks that it was hoping to protect. Measures of daily price volatility as well as quoted spreads deteriorated after the emergency order took effect. Also, the co-movement of the individual stocks with the overall market increased. In more efficient markets, individual stocks should be less dependent on the overall direction of the market and more dependent on company-specific information.

Despite the mixed results of the first short-selling ban, a more comprehensive prohibition against shorting in 800 financial companies was enacted from September 19 to October 8 that same year. Even the nonfinancial company General Motors was included in the prohibition. At the same time,

the SEC required the disclosure of short sales that exceed 0.25 percent of an issuer's outstanding shares or \$1 million of market value. Only money managers who were already required to file 13F reports are subject to these reporting requirements. These are managers with at least \$100 million assets under management.

Regulators outside of the United States were even more drastic in their measures to restrict short selling. The United Kingdom banned short selling of 30 financial stocks for four months. Australia banned all short sales for two months and, like the SEC, instituted reporting requirements. The Netherlands banned naked short sales of financial stocks for three months. Taiwan banned short selling in stocks amounting to 80 percent of the country's market capitalization for three weeks. Ireland and Germany also imposed restrictions on short sales.

A study on the efficiency of short sales that was conducted prior to the worldwide short selling bans found that restrictions on short selling have lower price efficiency.⁵ Restrictions on short selling were measured through the availability of shares available for shorting, and the level of borrowing fees. Price efficiency was defined as the lag with which an individual stock responds to market shocks. At the same time, the skewness of returns increased. This was associated with an increase of the number of large positive returns on stocks that suffer from short sale restrictions rather than a decrease in the number of large negative drops. Therefore, like Bris's study, this study confirms that short sale restrictions fail to meet their goals of reducing sharp declines in the affected stocks.

Dividend payments complicate the shorting of stocks. When a stock is sold short, there are two holders of the stock: the original buyer who has lent the stock out and the buyer who is the counterparty to the short sale. The buyer of a stock is ignorant as to the nature of the stock acquired. The buyer does not know whether the stock was purchased out of a seller's inventory or whether the stock had been borrowed and was sold short. Each buyer of a stock expects to receive a dividend and obtains the right to receive it through the purchase.

Short-selling activity increases over dividend dates, as shown in Figure 14.2. Both the percentage of shares available for shorting, labeled "Utilization," and the level of lending fees increase over dividend dates. Arbitrageurs must be careful if they maintain short positions over dividend dates or attempt to short around that time. The data underlying Figure 14.2 are based on a global data set and may not translate identically to each country. Shorting activity around dividend dates probably increases more in countries that give shareholders tax credits along with dividend payments.⁶

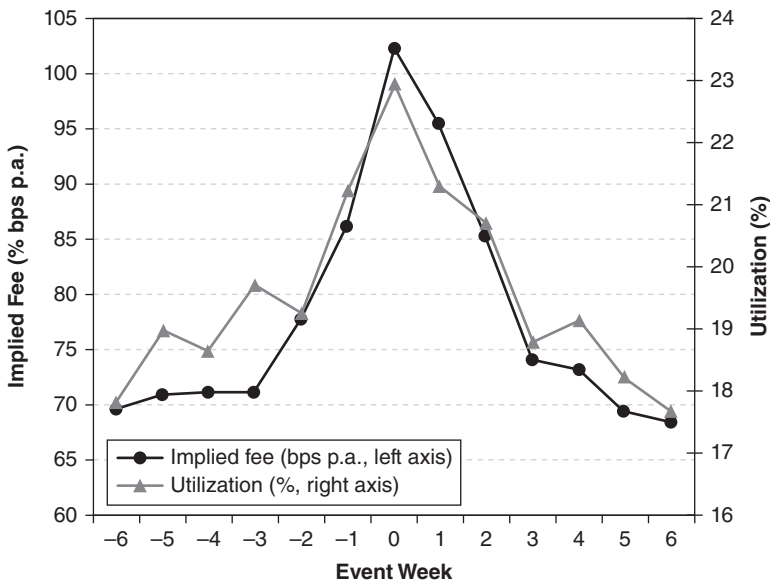


FIGURE 14.2 Fees and Short Sale Activity (Utilization of Shares Available) around Dividend Payments

Source: P. Saffi, K. Sigurdsson, Price Efficiency and Short Selling. Working Paper, London Business School, January 2007, p. 48.

TRANSACTION COSTS

Merger arbitrage spreads are very tight, and arbitrageurs must keep transaction costs under control. Transaction costs come in three forms: brokerage commissions, bid/offer spreads, and market impact.

Brokerage Commissions

As discussed in Chapter 3, commissions have fallen significantly over the last few years. Many mergers would be uneconomical at commission levels of just a few years ago. However, this is somewhat of a chicken-and-egg argument. One of the reasons why spreads have become tighter is the reduction in the overall level of trading commissions. If commissions were larger, then trading costs of arbitrageurs would be higher, and this would be reflected in wider arbitrage spreads. In this way, the fall in the cost of brokerage commissions has benefited not the arbitrage community but, rather, the investors who sell their shares after the announcement of a merger in order to capture

the premium. They obtain a higher price from the liquidity providers, the arbitrageurs, because commissions are lower.

Brokerage commissions bundle a number of services into a single fee:

- *Execution.* This is the basic activity of routing an order to an exchange electronic communication network (ECN) and matching it with a counterparty. Most trades are executed today electronically. Computer algorithms have been developed to split large orders into smaller ones to reduce market impact (to be discussed). Many brokers offer specialized execution services for arbitrageurs and long/short investors, whereby orders are not executed at set price levels; instead, a spread level is entered at which both sides of the trade will be executed. The computer will show one side of the trade in the market in a way that if that side is filled, the other side can be executed instantaneously. For large trades, markets may not be liquid enough to execute the order in a reasonable time frame. Brokers often match buyers and sellers based on knowledge of their clients' investment preferences. Despite increased automation of trading, the human element will remain an important factor for transactions of this type for some time to come. The cost of pure execution without any added value is currently below \$0.01 per share.
- *Idea generation and market surveillance.* Many brokers add value to arbitrageurs by monitoring the market and pointing arbitrageurs to trading activity in stocks going through mergers. Such market intelligence can be very valuable because arbitrageurs generally do not have the time or resources to monitor all trading activity themselves. Commissions charged by brokers who offer such extra services can be as low as \$0.02 per share.
- *Clearing.* Clearing is the act of settlement and paying for the shares bought or sold during the execution of the order. It is a highly automated process that benefits from scale effects. The cost of clearing is below \$0.005 per share.
- *Soft dollars.* In addition to monitoring the market and making suggestions to their customers, many brokers offer added services that they pay for through commissions. This practice is legal and used widely by money managers that seek to reduce costs at the expense of their clients. The idea of soft dollars is that the broker charges a higher commission than necessary and uses the extra payments to purchase services that the investment adviser can use to help with its research. Services typically paid for with soft-dollar commissions are third-party research, data services, and certain investment-related software. The use of soft dollars is particularly pervasive by hedge fund managers,

who trade frequently and thereby accrue significant soft-dollar credits. Instead of paying for research out of the management fee, it is paid for by soft dollars, so that the manager's overall profitability increases. For most arbitrageurs, soft dollars are not attractive because they reduce the spread that is already very tight.

Brokerage commissions are highly variable between different firms and even within a single firm for different clients and types of orders or securities. A common fee structure is based on the number of shares that are executed, often coupled with a minimum ticket charge or base fee per ticket.

Bid/Offer Spreads

Bid/offer spreads were discussed in Chapter 3 in the context of liquidity as a determinant of the profitability of merger arbitrage. Arbitrageurs have to place orders carefully in less liquid stocks with wide bid/offer spreads. For wide bid/offer spreads, it is not economic for an arbitrageur to pay the entire spread unless the arbitrage spread is unusually wide. The arbitrageur will try to work with limit orders that are placed within the bid/offer spread. The disadvantage of this strategy is that there is no guarantee that the order will be filled. Other investors may jump ahead of the order. The advantage is that the arbitrageur becomes a genuine provider of liquidity and contributes to the tightening of the bid/offer spread. A tighter spread, in turn, may encourage some sellers to come forward and either hit the arbitrageur's bid or place an offer in the market that is below the previous best offer and thereby again reduce the bid/offer spread.

Mark-to-market valuation adds an impediment to paying the entire bid/offer spread: Many arbitrageurs are required to value their long positions at the bid and short positions on the offer. Some can use midmarket pricing. Under these circumstances, if an arbitrageur pays the entire bid/offer spread, an immediate loss has to be booked. The loss will, of course, be recovered once the spread tightens. Nevertheless, it complicates the setup of an arbitrage position further.

For the short side of stock-for-stock offer, the previous arguments are also true, albeit in reverse.

Market Impact

Whenever an arbitrageur places an order to acquire shares of a target, the order influences the supply and demand balance. The increase in demand will have an impact on the price. This may not necessarily translate into an immediate jump of the target stock price. It could simply prevent the

price from making a correction that would have occurred in the absence of the arbitrageur's order. This effect is known as market impact. Although several consulting firms specialize in measuring market impact as part of an evaluation of execution and trading quality, the measurement of market impact is very difficult and is associated with a certain degree of speculation.

Nevertheless, there is no doubt that arbitrage activity does have a market impact. In the aggregate, market impact by all arbitrageurs helps sellers of a target's stock to obtain a better price than they would in the absence of arbitrage activity. This is a corollary of the argument made in Chapter 3 in the discussion of liquidity.

This discussion of market impact applies also to the short sale in a stock-for-stock merger.

MANAGING THE CASH POSITION

Portfolio managers view cash holdings as a strategic or operational tool. Strategically, cash holdings are treated as an asset class, and operationally, they are needed to meet redemption requests.

Cash can provide a cushion to the downside and represents liquidity that can be put to use when attractive investment opportunities become available. In addition, cash is held in case redemption requests are received from investors. This is a problem that is more acute for mutual fund managers than for arbitrageurs who work in hedge funds or broker/dealers. The latter do not have to worry about cash holdings because cash is part of the firm's overall asset/liability management. Hedge fund managers are in an intermediate position: Typical investment conditions include a 90-day notice period for redemptions, so that the fund manager has sufficient time to liquidate positions and raise cash. Mutual funds have daily redemptions and therefore must keep a portion of their portfolio in cash to meet redemption requests.

The downside of cash holdings is that they do not generate returns. Because the market increases over time, cash holdings act as a drag on performance. This effect is true not only for traditional portfolios but also for merger arbitrage portfolios. Merger arbitrage generates positive returns most of the time, which are higher than the return on cash that is invested in short-term products. Holding cash instead of being fully invested diminishes the overall return on a merger arbitrage portfolio.

For traditional investors, the decision to hold cash beyond the amount required to meet redemption requests is a voluntary choice of the manager. The portfolio can be invested in cash or other assets as the manager sees fit. Increases in cash occur when the manager takes an active decision to sell assets and substitute these investments with cash holdings.

For a merger arbitrageur, cash holdings are based less on choice and more on deal flow. Whenever a merger closes, the arbitrageur will receive cash that must be reinvested. In the case of a cash merger, the position is liquidated when the merger closes. In a stock-for-stock merger, the arbitrageur receives cash indirectly when the proceeds of the short sale become available once the short position is closed out. In both scenarios, the arbitrageur will hold cash rather than an investment. The important difference to a traditional money manager is that this cash holding is not based on the arbitrageur's decision to reallocate assets but is out of the arbitrageur's control. It depends on the timing of the closing of the mergers that the arbitrageur is invested in. Mergers close more or less randomly. Even though the arbitrageur can make a rough guess about the closing, the date cannot be pinpointed precisely. For mergers, the closing date is often within a few days of the shareholder meeting. However, when regulatory approvals are required for a merger, then the shareholder meeting is often well before the actual closing date. Even when the arbitrageur has a high level of confidence in a closing date, there can still be delays in the settlement of the cash or stock proceeds.

Due to this uncertainty, the arbitrageur receives cash as a result of the closing of a merger and now faces the decision to

- Invest in other mergers, currently held in the portfolio or not; or
- Hold on to the cash in case another merger is announced shortly.

Like the liquidation of investments, the decision how to invest cash is different from that faced by a traditional money manager. The traditional manager has a well-defined choice of investment. The arbitrageur also has a defined choice of mergers to invest in. However, mergers are announced at random intervals. In addition to the already announced mergers that the arbitrageur can invest in, there is a probability that another attractive investment opportunity will be announced shortly after the arbitrageur receives a payout from a closing merger.

Assume the arbitrageur spreads the cash across the mergers currently held in the portfolio. The risk characteristics of the portfolio change as the concentration of individual position increases. If another merger is announced shortly thereafter that the arbitrageur deems attractive, all positions must be reduced to free up sufficient funds to invest. In light of the tight absolute spreads, cost of commissions, and bid/offer spreads, this is not a good proposition. Arbitrageurs are more likely to hold the cash until a new merger is announced that is attractive to invest in.

A direct and visible result of this problem is that average cash balances are higher in merger arbitrage funds than in traditional investment vehicles. Cash holdings are considered a cash drag on performance in most portfolios.

They are also a drag on performance in merger arbitrage portfolios, but the drag is less of a problem than the alternative. If the cash was invested and subsequently redeployed in a newly announced merger, transaction costs would be much higher than the opportunity cost of holding cash. A back-of-the-envelope calculation illustrates this. Assume the average stock has a price of \$20 and the bid/offer spread is 4 cents, while commissions are 2 cents per share. This implies trading costs of 12 cents per share for a round trip, or 0.6 percent. For a long/short merger, the total cost would be twice as high, or 1.2 percent. If cash is held, it can be invested in short-term instruments (money market funds) to yield a return, which reduces the opportunity cost. This compares to a typical monthly return of 1 percent on a merger arbitrage strategy. It is clear that it is best to hold cash rather than incur transaction costs if the arbitrageur thinks that another attractive merger is likely to be announced within no more than a few weeks.

The timing of the closing of mergers is subject to a small seasonality effect. Companies often try to close a merger prior to the end of their fiscal year, which ends on December 31 for most firms. Firms with fiscal years not ending with the calendar year typically have fiscal years that end on another calendar quarter-end. Companies strive to close the transaction in the current fiscal year, or before the completion of a fiscal quarter, in order to simplify the accounting by being able to show financials for the merged entity for an entire fiscal year or quarter.

This effect is apparent from the data. Figure 14.3 shows the number of mergers closing in each calendar month between the years 1990 and 2013. Only cash mergers in the United States with an equity value greater than \$50 million were considered, of which there were 3,393 over this period. It can be seen that most mergers closed in the calendar month of December. July is also notable; there may be more merger closings in this month because companies try to close deals before the summer break when many employees take vacation.

Publicly available mutual funds that employ merger arbitrage are required to report their portfolio holdings periodically, in the United States even quarterly. The annual and semiannual holdings are included in reports sent to shareholders, whereas the holdings at the end of the first and third quarters are reported to the SEC. In the United States, most funds have a fiscal year that ends either October 31 or December 31. Hedge funds do not report their holdings publicly but, depending on their jurisdiction of incorporation and prospectus, may be required to send audited financial statements to their investors. Investors who are unaware of the cash management problem will assume mistakenly that the fund manager has taken the decision to hold a large amount of cash, even though that holding is of a transitory nature only.

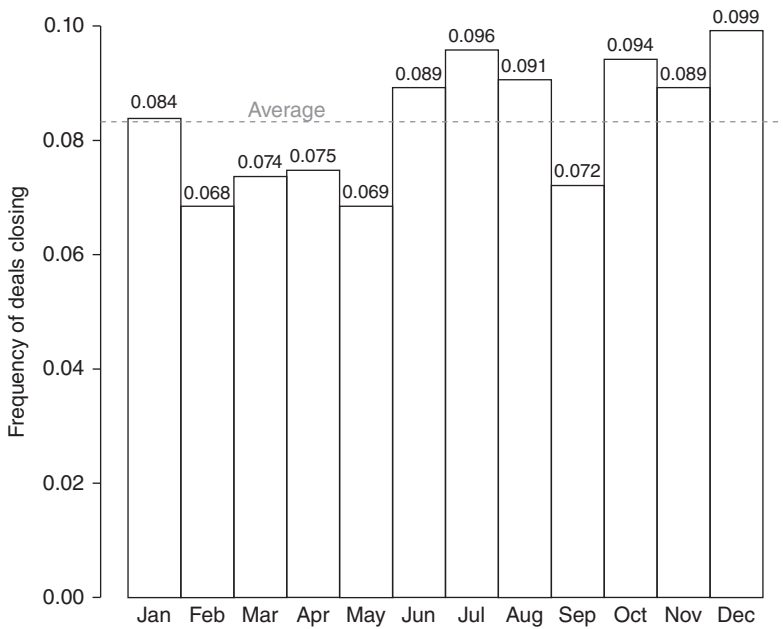


FIGURE 14.3 Frequency of Merger Closings by Calendar Month, 1990–2013

A different type of cash management problem faced by a fund manager is the holding of a certain amount of cash to meet redemption requests. This problem arises in all open-ended funds that have a high frequency of redemptions. Hedge funds have normally negotiated a notice period of 90 days prior to the calendar quarter-end, sometimes 45 days. This gives the manager sufficient time to liquidate positions after redemption requests are filed by investors. The cash drag created by a structure of quarterly redemptions will affect all investors and can be worse than in the case of open-ended funds if redemptions represent a large percentage of the hedge fund. In that scenario, the manager will sell positions throughout the quarter to raise cash to the level necessary to pay for the redemption. The period of time for which the cash is held can be up to three months, and all investors will suffer a cash drag in that quarter. For small redemptions, this effect will be negligible, but it can become material for sizable redemptions. In an open-ended fund, in contrast, redemptions occur much more rapidly, and managers have tools (to be described) to minimize the impact of cash holdings on performance. Hedge funds justify the lengthy notice periods for redemptions with illiquidity of investments; this is not a valid reason for merger arbitrage funds, which invest mostly in equity securities that are highly liquid or in derivatives

positions that also can be closed easily. It is difficult to understand why merger arbitrage investors are willing to accept 90-day notice periods for merger arbitrage hedge funds despite the high liquidity of the underlying instruments.

A commercial solution has been developed to help open-ended mutual funds minimize cash holdings to meet redemption requests. ReFlow Management Co. of San Francisco will acquire the shares redeemed by investors for up to 30 days and thereby smooth the fluctuation in cash requirements. For the duration of its holding period, ReFlow assumes the full market risk of owning the fund's shares. A fund participating in ReFlow's program benefits in several ways: Overall cash balances can be lower than if the fund were to hold a large cushion against redemptions, and the costs related to selling and buying shares in the fund's investments are eliminated. In addition, the adverse tax effects of realizing gains merely to satisfy redemption requests are avoided. The fund can redeem ReFlow's shares later when cash becomes available through investments, or liquidate investments in a more orderly manner. The key requirement is that under an SEC no-action letter, ReFlow's investment must be redeemed within 30 days. Because ReFlow owns shares in the fund that are not senior to other investors, it is not considered to own senior securities, which would be prohibited under the Investment Company Act. Redemption in kind for ReFlow's shares is also available for funds that seek to avoid triggering tax events.

ReFlow's service does not come for free. Its capital is allocated through an auction mechanism. Funds looking to access ReFlow's funds submit a bid of at least 0.25 percent of the amount requested. ReFlow will fill all requests for fund above the minimum winning bid in a Dutch auction. ReFlow's service has also become available to European funds registered in Luxemburg.

To date, the most sophisticated approach to handle the cash management problem analytically has been developed by Juliana Nascimento and Warren Powell of the Department of Operations Research and Financial Engineering at Princeton University⁷ in response to an inquiry by this author whether the newsvendor inventory solution can be applied to the mutual fund cash problem. The newsvendor formula is used widely for optimizing inventory when demand is stochastic and there are costs of holding excess inventory.

For a mutual fund, the cash level R_t at time t after new investments, D_t^i , must be sufficient to cover redemptions $D_t^l + D_t^s$, which are large and small redemptions. The incidence of large redemptions will have a more dramatic impact on costs than smaller redemptions, so that they should be modeled independently. When the cash holdings after new investments are insufficient to meet redemptions, $R_t < D_t^l + D_t^s$, the fund incurs a cost of shortfall, ρ^{sh} in

liquidating its holdings. A financing cost P_t^f will accrue for large amounts of redemptions where positions cannot be liquidated immediately. Whenever the fund holds too much cash, it incurs an opportunity cost in the form of the rate of return on the portfolio, P_t^r .

The cash management decision x_t that must be taken by the fund manager in each period t is the move x_{t1} from the portfolio into cash and x_{t2} from cash back into investments: $x_t = (x_{t1}, x_{t2})$. The transaction cost is $\rho^{tr}(x_{t1} + x_{t2})$. After the decision x_t has been taken, the cash level is R_t^x .

$$R_t^x = \max(0, R_t - D_t^l - D_t^s) + x_{t1} - x_{t2} \text{ and } R_{t+1} = R_t^x + D_{t+1}^i \quad (14.5)$$

The cost for one period is given by

$$\begin{aligned} Ct = & \rho^{sb} \times (D_t^l + D_t^s - R_t) \times 1_{\{D_t^l - D_t^s \geq R_t\}} + P_t^f \times (D_t^l - R_t) \\ & \times 1_{\{D_t^l \geq R_t\}} + P_t^r \times (R_t - D_t^l + D_t^s) \times 1_{\{D_t^l + D_t^s < R_t\}} \\ & + \rho^{tr} \times (x_{t1} + x_{t2}). \end{aligned} \quad (14.6)$$

The problem is to minimize this cost.

The variable are combined into a state of the system before and after the decision x_t taken at time t :

$$S_t = (W_t, R_t) \text{ and } S_t^x = (W_t, R_t^x), \text{ respectively, 14.7}$$

where

$$W_t = (P_t^r, P_t^f, D_t^i, D_t^l, D_t^s) \text{ represents the exogenous inputs known at time } t.$$

The key to dynamic programming is the definition of a Bellman equation. It represents the problem that is to be optimized, coupled with one or several constraints. In the mutual fund cash problem, the Bellman equation is a recursive value function V such that

$$V_{t-1}^{*,x}(W_{t-1}, R_{t-1}^x) = E[\max_{x \in \mathcal{X}(W_t, R_t)} -C_t(W_t, R_t, x) + \gamma V_t^{*,x}(W_t, R_t^x) | (W_{t-1}, R_{t-1}^x)] \quad (14.8)$$

The problem can be solved through a piecewise-linear optimization using Approximate Dynamic Programming (ADP). Nascimento and Powell use an algorithm SPAR-Mutual, shown in the box, and prove that this algorithm converges. The algorithm breaks the value function into piecewise linear functions $\bar{v}_t''(W_t, R_{t1}^x), \dots, \bar{v}_t''(W_t, R_{tN}^x)$ that approximate the concave shape of the actual value function. The algorithm determines the slopes of those pieces that are close to optimal cash levels, thereby reducing computational effort.

At the beginning of time period t , the algorithm creates a Monte Carlo sample of all the variables in W_t , projecting these values forward over n periods until time N . Temporary approximations of the slopes are calculated in the vector $Z_{t-1}^n \times \bar{\alpha}_{t-1}^n \times (S_{t-1}^x)$ is a stepsize rule that is state dependent.

Nascimento and Powell use data to examine the performance of the algorithm based on data from the Center for Research in Security Prices (CRSP) at the University of Chicago Booth School of Business and

EXHIBIT 14.1 SPAR-MUTUAL ALGORITHM

STEP 0: Algorithm Initialization:

STEP 0a: Initialize $\bar{v}_t^0(W_t, R_t^x)$ for all t and (W_t, R_t^x) monotone decreasing in R_t^x .

STEP 0b: Pick N , the total number of iterations.

STEP 0c: Set $n=1$.

STEP 1: Planning Horizon Initialization: Observe the initial cash level $R^{x,n}_{-1}$.

Do for $t=0; \dots; T$:

STEP 2: Sample/Observe $p^{f,n}_t, p^{r,n}_t, D^{i,n}_t, D^{l,n}_t$ and $D^{s,n}_t$.

STEP 3: Compute the pre-decision cash level: $R^n_t = R^{x,n}_{t-1} + D^{i,n}_t$:

STEP 4: Slope Update Procedure:

If $t > 0$ then

STEP 4a: Observe $\hat{v}^n_t(R^{x,n}_{t-1})$ and $\hat{v}^n_t(R^{x,n}_{t-1}+1)$.

STEP 4b: For all possible states S_{t-1}^x :

$z_{t-1}^n(S_{t-1}^x) = (1 - \bar{\alpha}_{t-1}^n \times (S_{t-1}^x)) \times \bar{v}_{t-1}^{n-1}(S_{t-1}^x) + \bar{\alpha}_{t-1}^n \times (S_{t-1}^x) \times \hat{v}^n_t(R_{t-1}^x)$.

STEP 4c: Perform the projection operation $\bar{v}_{t-1}^n = \prod -C_t, W_{t-1}^n, R^{x,n}_{t-1}(z_{t-1}^n)$.

STEP 5: Find the optimal solution x^n_t of $\max_{x \in X(W_t^n, R_t^n)} -C_t(S_t^n, x)$

$+ \gamma \bar{v}_t^{n-1}(W_t^n, R_t^x)$

STEP 6: Compute the post-decision cash level: $R^{x,n}_t = \max(0, R^n_t - D^{l,n}_t - D^{s,n}_t) + x^n_{t1} - x^n_{t2}$.

STEP 7: If $n < N$ increase n by one and go to step 1. Else, return \bar{v}^N .

Source: Juliana Nascimento and Warren Powell, "Dynamic Programming Models and Algorithms for the Mutual Fund Cash Balance Problem," *Management Science* 56, no. 5, May 2010.

redemption information from Investment Company Institute for the period from July 2005 until June 2006 for 4,623 stock funds. Further implementation of the algorithm with more granular investment and redemption data is expected to be conducted in the future.

RISK MANAGEMENT

A centerpiece of modern finance is the concept that risk can be calculated and analyzed. The principal parameters that drive the theory of financial risk are standard deviation (volatility) and correlation. In Chapter 4, some of the shortcomings of these measures were discussed when dealing with merger arbitrage and other event-driven strategies. For the measurement and management of the risk of a merger arbitrage portfolio, the metrics used by traditional risk managers are not very useful.

The reason for the inadequacy of financial risk measures based on modern portfolio theory lies in the noncorrelated nature of the risks inherent in merger arbitrage. Most investment strategies rely in one way or another on the dynamics of stocks relative to the overall market. For example, a long/short equity portfolio might hold long positions in stock with high valuations and short positions in stocks with lower valuations. In the short run, it can be expected that these stocks will exhibit similar dynamics relative to the overall market as they have historically. In this case, financial risk management can rely on the plethora of statistical risk measures that have been developed.

For merger arbitrage, the situation is different in that it is known that the dynamics of a stock's behavior have changed at the time of the announcement of a merger. It is not reasonable to assume that it will behave in the near future similarly as it has historically. It was illustrated earlier with Figures 4.2(a) and (b) how the dynamics of stocks change after a merger. Therefore, value at risk, shortfall, and similar risk management techniques do not provide meaningful results for merger arbitrage portfolios.

Merger arbitrageurs are well aware of these restrictions and rely on other methodologies that will appear antiquated to risk managers used to sophisticated statistical techniques. Most arbitrageurs use variations of classic position limits to manage their risk.

In its simplest incarnation, a position limit is a simple cap on the size of any single merger in a portfolio. For example, an arbitrageur may decide not to hold more than 5 percent of the portfolio in a single arbitrage position. Limits can be hard or soft. A hard limit is not exceeded under any circumstance. A soft limit can be exceeded if the arbitrageur has a particularly strong opinion about the likelihood of success of a merger.

A corollary of limiting the percentage of a portfolio that can be invested in a single arbitrage deal is to target the number of transactions in which the arbitrageur invests. There are two types of arbitrageurs, as discussed in Chapter 3: concentrated and diversified. Concentrated arbitrageurs seek to limit the number of transactions in which they invest and seek to minimize the incidence of collapsing deals that generate a loss through extremely deep and thorough analysis. Diversified arbitrageurs try to limit the impact of the inevitable deal failure by spreading the risk over a larger number of transactions. A survey of the risk management practices of risk arbitrageurs⁸ reveals that the average number of positions held by the 21 arbitrageurs who responded to the questionnaire was 36, with a minimum of 25 and a maximum of 40.

A slightly more sophisticated version of position limits considers the downside risk of a position and limits that to a percentage of the portfolio. The arbitrageur will estimate the severity of each position, as described in Chapter 4, and define a percentage of the portfolio that the aggregate severity (long and short) of any position cannot exceed.

Additional methods for limiting exposure can be set for the types of transactions that an arbitrageur can invest in. For example, arbitrageurs may want to limit their exposure to any individual industry or sector. This is easier said than done, because mergers often occur in waves in certain industries. As a result, deal flow is biased toward the industries undergoing consolidation. An arbitrageur with strong industry limits may have to forgo arbitrages with high risk-adjusted returns. Therefore, sector limits in arbitrage strategies are not comparable to the use of these limits in stock picking or asset allocation strategies, and their effectiveness is less apparent in controlling risk.

Another type of position limit looks at the structure of the transaction. Arbitrageurs may want to restrict the proportion of leveraged buyouts (LBOs) in their portfolio because these transactions have a higher risk due to the purely financial interest of the buyer. In a strategic transaction, a buyer still may proceed with an acquisition even if the financial circumstances change, because the primary reason for the transaction is a strategic fit of the two firms. In contrast, an LBO relies exclusively on financial considerations to be successful.

Similarly, some hedge funds are constrained by implicit position limits on the payment type in a merger. Some hedge funds promise their investors in their offering materials to sell short at least a certain percentage of their portfolio. Many investors believe erroneously that the short positions will protect the arbitrage portfolio from market movements. As a result, they must invest at least that percentage in stock-for-stock transactions. Such a restriction can become as problematic as limits on industries or sectors. At a time when corporations have large amounts of cash available, more cash

transactions are likely to be done than stock-for-stock mergers. Arbitrageurs who are subject to a minimum short sale requirement then will all chase after the limited number of stock-for-stock mergers, thereby driving down spreads and annual returns of these transactions.

Besides, as discussed earlier, the belief that the short position in a stock-for-stock merger protects against market movements is misguided. More precisely, the short position is irrelevant to protecting against market risk. This belief has its origin in standard long/short equity strategies, where it is applicable. The idea is that if the market falls and the transaction is canceled, then both the long and the short leg of the arbitrage will trade at lower levels, so the gain on the short side will offset the loss of the long leg. However, this is not necessarily the case for merger arbitrage investments, because market risk is at best a second-order effect. The principal risk remains event risk—the collapse of the merger. In a long/short position, the cancellation of a merger can lead to significantly higher losses than the termination of an otherwise identical cash deal. First, the long side loses value, and, second, the arbitrageur experiences a short squeeze on the short leg. Therefore, the assumption that losses on the long leg will be offset by gains on the short leg is incorrect.

A more quantitative approach to risk management for event-driven investment strategies was introduced recently by Philippe Jorion.⁹ He relies on correlations between events to compute a value at risk. The approach is modeled after credit default analysis pioneered by Moody's Investor Services in the analysis of collateralized debt obligations. It allows for the use of structural models to determine probabilities of deal failure. It also helps to determine the number of transactions (diversification) needed in an arbitrage portfolio to achieve a certain risk level. Another way of looking at dollar risk is to consider it economic capital needed for survival, which conversely determines the leverage that can be employed by the arbitrageur.

The author believes that the use of correlations is an inadequate approach to determine economic capital, whether for collateralized debt obligations or merger arbitrage portfolios. Economic capital should be set so that the portfolio can withstand a stress scenario. This is the traditional approach used by insurance companies. As recent events have shown, the traditional approach has been more successful than the more modern methodologies used in the evaluation of credit risk. Financial risk managers should familiarize themselves with actuarial techniques. Historical correlations are average values that are of no use in the estimation of stress cases. A better approach in the determination of economic capital is the computation of a distribution of outcomes for the portfolio, either through trees or through Monte Carlo projections. Economic capital should be set so that the portfolio can withstand one of the worst outcomes of

this simulation. As in credit, seasoning effects do play some role in the risk assessment of merger arbitrage. This timing dimension is missing from Jorion's approach but can easily be implemented in such a simulation.

Mitchell and Pulvino (see Chapter 3) pointed to the poor performance of merger arbitrage in sharply declining markets. One strategy to mitigate losses that can arise in a sharply declining market is to buy out of the money index put options. Most of the time they will expire worthless, and the arbitrageur will lose the option premium. When there is a decline in the market, these options will be in the money and can at least partially offset the losses suffered from collapsing deals. A portfolio following this strategy will have a slightly lower return in most market conditions due to the cost of acquiring options that expire worthless. However, the benefit is a sharply improved risk profile. In addition to minimizing option premiums by selecting out of the money strike prices other option strategies can be implemented such as barrier options or various types of spreads.

Managing downside risk with equity put options may be insufficient, because this method overhedges most of the time but underhedges when the hedge is most needed. An approach to hedging based on finite mixture models has been developed by Adam Tashman.¹⁰ Finite mixture models combine two return distributions from two different states: when the market is in a regular state or in a sell-off state. These two distributions are combined to calculate a hedge ratio that is more accurate than one based solely on linear regression of returns. This approach is similar to hedging through regime switching models.

MERGER ARBITRAGE INDICES

Several firms have built indices that seek to replicate mechanically a merger arbitrage portfolio in a way similar to a traditional stock index. The two main providers are IQ Index and Standard & Poors. Both have the major weakness that they do not represent stock-for-stock mergers appropriately.

As part of its efforts to introduce specialty indices, Standard & Poor's developed a series of arbitrage indices, including a long-only merger arbitrage index that began to be calculated in 2008. Data were backfilled to December 31, 2005, where the index value is set to 1,000.

The index contains up to 40 stocks from any developed market¹¹ that are in the process of being acquired. Each company has an index weighting of 2.5 percent at the time it is included, or less if the index contains insufficient cash (more on the indices cash component later). Only companies with an equity of more than \$500 million are included if the premium at the time of the announcement is at least 5 percent. Both cash and mixed cash/stock deals

are included, but pure stock-for-stock deals are not. For mixed cash/stock deals, the cash component must represent at least 25 percent of the value.

A company is included in the index for one year at the most. If the deal has not closed after one year, the company is removed. A company is also removed once a merger is completed. Similarly, it is removed from the index if the merger is canceled.

No more than 40 companies are in the index at any time. If there are more than 40 eligible merger candidates available, then the company that has the lowest return since entering the index will be replaced by another target. The 2.5 percent weighting of each constituent firm will fluctuate over time with the change in its market value. Therefore, a company can exit the index with a weighting of less than 2.5 percent if its price dropped during the time it was in the index. Its replacement then will be added at that lower weighting. This mimics the management of an actual portfolio. An arbitrageur can put to work only that capital that has been received from the sale of an existing position.

If there are fewer than 40 eligible companies, the index will contain a cash component, because the weighting of each firm is limited to 2.5 percent at the time of inclusion. Interest on that cash balance accrues daily based on U.S. dollar LIBOR. Dividends are added to the cash position on the ex-date. However, the tax treatment of these dividends is assumed to be punitive: It reflects the rates paid by a nonresident institutional investor based in Luxembourg who does not benefit from a double-taxation treaty.

In a similar business model, Index IQ has also developed a number of passive specialty indices that seek to implement hedge fund strategies as varied as market neutral, global macro, and fixed-income arbitrage. Its merger arbitrage index consists of target companies in developed markets that are eligible for inclusion based on their trading prices. The portfolio is rebalanced monthly, when new constituents are included. To determine eligibility, a pseudo-probability is calculated:

$$Pr = C_p - A_{p-1} / O_p - A_{p-1} \quad (14.9)$$

where

C_p is closing price of security one day prior to monthly rebalance date.

A_{p-1} is the closing price of security one day prior to deal announcement date.

O_p is the announced merger price.

Several conditions determine whether a target company is included in the index at the monthly rebalancing.

TABLE 14.5 Index Scenario Probabilities

Scenario #	Scenario	Probability Scenario Calculation
1	$C_p < A_{p-1} < O_p$	Probability less than zero
2	$A_{p-1} < C_p < O_p$	Probability between zero and 100
3	$A_{p-1} < O_p < C_p$	Probability greater than 100
4	$C_p < O_p < A_{p-1}$	Probability greater than 100
5	$O_p < C_p < A_{p-1}$	Probability between zero and 100
6	$O_p < A_{p-1} < C_p$	Probability less than zero

Based on the probability calculated for each transaction with Equation 14.9 a transaction will fall into one of six scenarios listed in Table 14.5. Stocks in scenarios 5 and 6 are not included in the index. Those included based on scenarios 1, 3, and 4 will stay in the index for 180 days or the closing of the merger, whichever occurs first. Stocks included based on scenario 2 can stay in the index for 360 days, or until the closing of the merger if that occurs first.

Stocks that are included are then weighted by their seven-day median dollar trading volume on the long side, and various short ETFs weighted so that they replicate the short component of the acquirers in stock-for-stock mergers. The attempt to replicate the short side of stock-for-stock mergers is a crucial point of distinction of this index to that provided by S&P.

The base value of the index, 1,000, was set on October 31, 2007.

Figure 14.4 shows the performance of the two merger arbitrage indices just discussed from their inception in through November 2014 compared to the S&P 500 index and bonds. Table 14.6 shows a number of key statistics for the index over the same period. It can be seen that these passive indices exhibit similar properties as the merger arbitrage hedge fund indices discussed in Chapter 3: The median return is comparable to that of the S&P 500 index, whereas volatility is more akin to that of bonds. The period from 2004 through late 2008 was characterized by an expansive and, as some would argue inflationary, monetary policy that favored stocks over all other investment strategies. Over longer periods of time, the S&P 500 index should perform more like the IQ Index and S&P Merger Arbitrage Indices, although the volatility of the latter will be closer to that of bonds. This is consistent with the experience of merger arbitrage funds discussed in Chapter 3. It can also be seen that the long-only S&P Merger Arbitrage Index exhibits a higher volatility than that of IQ Index. Most likely, this effect is related to the inclusion of short biased ETFs in the index calculated by IQ Index.

Figure 14.5 shows the risk/return relationship among the S&P Merger Arbitrage Index, stocks, and bonds. Table 14.7 shows the downside risk. Readers should refer to the explanation of this graph and table in Chapter 3.

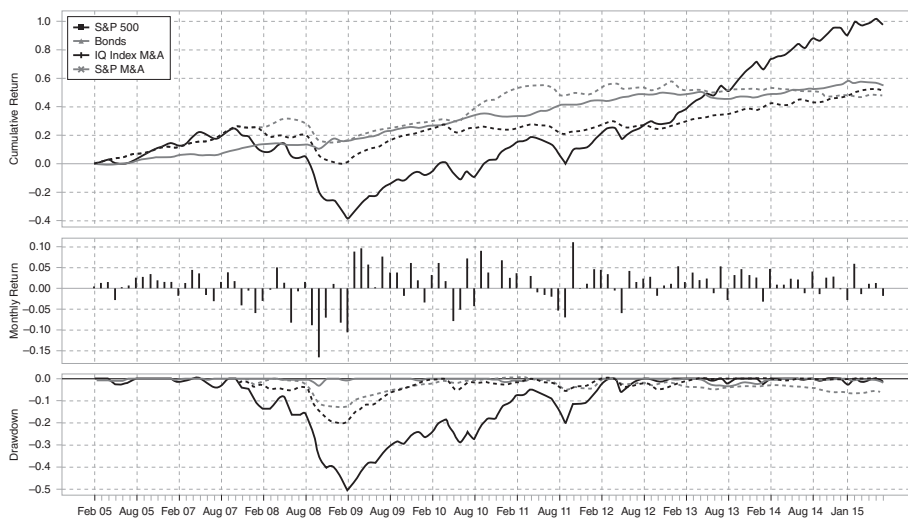


FIGURE 14.4 Performance of the IQ Index and S&P Merger Arbitrage Indices Relative to Other Asset Classes

TABLE 14.6 Statistics of Monthly Returns of the IQ Index and S&P Merger Arbitrage Indices

	Standard & Poors Merger Arbitrage Index	IQ Index Merger Arbitrage Index	Lehman Aggregate Bond Index	Standard & Poors S&P 500 Index
Observations	113	92	113	113
NAs	0	22	0	0
Minimum-0.0697	-0.0731	-0.0236	-0.1679	
Quartile 1	-0.0037	-0.0061	-0.0017	-0.0158
Median	0.0035	0.0040	0.0034	0.0134
Arithmetic Mean	0.0036	0.0022	0.0039	0.0070
Geometric Mean	0.0034	0.0020	0.0039	0.0060
Quartile 3	0.0110	0.0142	0.0104	0.0329
Maximum	0.0424	0.0689	0.0373	0.1093
SE Mean	0.0016	0.0021	0.0009	0.0041
LCL Mean (0.95)	0.0005	-0.0020	0.0021	-0.0011
UCL Mean (0.95)	0.0066	0.0065	0.0057	0.0151
Variance	0.0003	0.0004	0.0001	0.0019
Stdev	0.0165	0.0205	0.0095	0.0435
Skewness	-0.5705	-0.7420	0.1644	-0.8440
Kurtosis	3.0716	3.0874	1.1906	1.8291

TABLE 14.7 Various Downside Risk Measures

	Standard & Poors Merger Arbitrage Index	IQ Index Merger Arbitrage Index	Lehman Aggregate Bond Index	Standard & Poors S&P 500 Index
Semi Deviation	0.0121	0.0157	0.0066	0.0337
Gain Deviation	0.0109	0.0119	0.0068	0.0236
Loss Deviation	0.0130	0.0173	0.0055	0.0349
Downside Deviation (MAR=10%)	0.0146	0.0187	0.0094	0.0344
Downside Deviation ($r_f=0\%$)	0.0105	0.0147	0.0047	0.0306
Maximum Drawdown	-0.1321	-0.2111	-0.0383	-0.5095
Historical VaR (95%)	-0.0242	-0.0330	-0.0108	-0.0750
Historical ES (95%)	-0.0368	-0.0522	-0.0161	-0.1020
Modified VaR (95%)	-0.0250	-0.0341	-0.0110	-0.0723
Modified ES (95%)	-0.0443	-0.0589	-0.0157	-0.1114

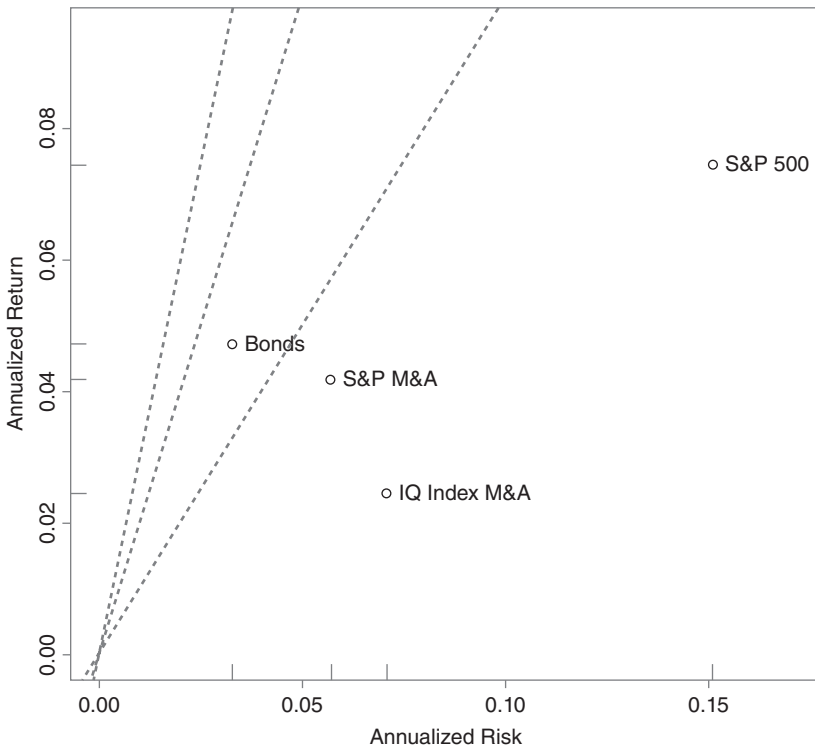


FIGURE 14.5 Risk/Return Trade-off for the S&P Merger Arbitrage Index Since Its Inception

SEPARATE ACCOUNTS

Some merger arbitrage managers offer their clients the management of separate accounts in the strategy. There are a number of advantages to separate accounts over pooled investment vehicles such as hedge funds or mutual funds. The account is held in the name of the client, and all securities are in the name of the client. The manager simply has investment authority with respect to the account. Holders of separate accounts receive statements that show all the holdings in their account. For some institutional investors, notably insurance companies, there are restrictions on their ability to invest in pooled vehicles. It is easier for them to ask an arbitrageur to manage a separate account than to allocate assets to a pooled fund. In fact, variable annuities and other life insurance wrappers of hedge fund strategies need to be established as separate accounts. In the United States, tax reporting can be simplified in certain circumstances because the investor will receive

a tax Form 1099 rather than a Schedule K-1. Hedge funds in particular are notorious for sending out their tax information late, requiring their investors to file extensions and potentially incur penalties for underpayment. In fact, for some investors, individualized tax management is one of the biggest advantages of separate accounts. Whether an arbitrage manager should get involved with optimizing taxes for clients is a different question.

For a manager, it is more complicated to manage separate accounts than a pooled vehicle. Managing a plethora of separate accounts requires additional effort compared to a pooled vehicle that is managed in a single account. Most providers of separate account platforms are now offering tools to streamline order placement and integrate seamlessly with the manager's order management systems. Nevertheless, when a new account is opened or an existing account is closed, there is a significant effort in establishing the initial position or liquidating the holdings. In a pooled vehicle, additions or withdrawals of capital are simply one element of the overall cash management.

Some separate accounts established outside of the United States allow investors to obtain leverage substantially in excess of what is allowed under domestic regulations. As a low-volatility strategy, merger arbitrage is well suited for such leverage.

More importantly, the investment ideas of arbitrageurs are proprietary information that they do not want to share with others. If clients access their account and see the deals in which the arbitrageur has invested, information about the positions can leak into the market and potentially can lead to problems such as front running or a squeeze in the lending market for short positions. For this reason, many arbitrage managers prefer to offer their clients only pooled vehicles.

Finally, managing separate accounts adds an additional layer of administrative and compliance burden to the manager's business.

HEDGE FUNDS AND LIQUID ALTERNATIVES

The arbitrage community was a close-knit community of investment houses until the emergence of hedge funds and mutual funds that invest in merger arbitrage. Suddenly, what had been an exclusive niche became available to a much wider group of investors.

Hedge funds and mutual funds are both structured to pool the assets of their investors. Their difference is more one of aura than substance. In fact, hedge funds are modeled after mutual funds: In the United States, a fund is a standalone entity that enters into a management agreement with an investment adviser.¹² This is different from other jurisdictions, where funds

tend to be sponsored by their adviser and are not independent entities. The principal difference between the structures is one of regulation. Hedge funds are unregulated partnerships that can be made available only to clients who meet qualification requirement in terms income and wealth. At the time of writing, in the United States an annual income of \$200,000 (or \$300,000 if filing jointly) or a net worth of \$1 million are required. These amounts are not indexed to inflation. Therefore, the percentage of households that can invest in hedge funds increases steadily.¹³ Hedge funds are not required to make regulatory filings or report to their investors. However, the initial offering document must contain information that is equivalent to what would be contained in a mutual fund prospectus.¹⁴ This lack of transparency can be an advantage for a fund manager because the fund's investments can be kept confidential. Nevertheless, in the case of a U.S. manager, if the manager has more than \$100 million under management, it is required to file a 13-F holdings report quarterly. The public can get an idea from these holdings reports which securities are held by hedge funds, despite the aura of secrecy. Even offshore funds that are managed by U.S. managers will have their holdings revealed through this mechanism. The absence of transparency is also a problem for investors, because it complicates their oversight of the manager to whom they have entrusted their assets.

Mutual funds do not have the transparency problem. They report their holdings on a quarterly basis and offer several other advantages over hedge funds:

- *Lower fees.* Typical mutual fund expense ratios are between 1.5 and 2 percent, whereas hedge funds charge 2 percent plus a part of the profits as a performance fee in addition to operating expenses.¹⁵ A performance fee also can be levied by U.S. mutual funds, but it must be symmetric. For example, if the manager of a U.S. mutual fund were to receive 20 percent of the gains, then the fund would have to be reimbursed for 20 percent of the losses. For hedge funds, however, the performance fee is asymmetric and applies only to gains. Losses are entirely paid out of the investors' assets. In the case of international mutual funds, in particular UCITS funds, hedge-fund style performance fees are allowed and indeed are levied by most managers of these vehicles. Both symmetric and asymmetric performance fees have their advantages and problems. Proponents of performance fees argue that they align the interest of the investor and the manager and are a strong incentive to attract the best managers. An asymmetric performance fee is always more attractive for the manager but creates problems for the investor: Many managers simply close their funds after losses and start new ones so that they can charge performance fees on any rebound. A symmetric performance fee risks

bankrupting the manager under extreme market conditions. Therefore, mutual funds that have performance fees limit them in order to avoid reimbursement of potentially devastating amounts. If the incentive argument is true, then a limited symmetric performance fee is inferior to an asymmetric one. The principal problem with asymmetric performance fees in vehicles that have little to no transparency is that investors cannot control whether the manager takes unreasonable risks in order to maximize earnings.

- *Performance reporting.* Mutual funds report daily net asset values, whereas hedge funds report their performance only monthly.¹⁶ This is another aspect of insufficient transparency of hedge funds. For UCITS funds the reporting periodicity varies although most funds choose daily performance reporting.
- *Liquidity.* Mutual funds allow their investors to redeem on a daily basis. Hedge funds have created complicated withdrawal schedules, under which investors can redeem their shares only quarterly with at least 90 days' notice. If more than a certain percentage of investors seek to redeem in the same quarter, some funds will prevent all others from redeeming in the same quarter. These provisions were introduced originally because many hedge funds use illiquid instruments that can be difficult to unwind. It is hard to see why these provisions should apply to merger arbitrage funds, however, since these funds are invested in liquid publicly traded securities. Some mutual funds have been introduced with periodic liquidity—for example, weekly instead of daily liquidity. However, such structures remain exceptions.
- *Lower minimum investments.* Mutual funds can be invested in with small amounts, generally a few thousand dollars. Hedge funds have higher minimum investments that are sometimes in the millions of dollars.
- *Tax reporting.* Tax transparency and reporting varies substantially. Some offshore funds are said to provide next to no tax transparency as to income, capital gains, and unrealized appreciation. U.S. mutual funds furnish their investors with a Form 1099, and most non-U.S. funds have equivalent tax transparency, whereas hedge funds are partnerships that report on a Schedule K-1. The latter complicates tax reporting for their investors. Both entities are pass-through vehicles, whose gains are taxable only on the level of the investor, not on the level of the fund.
- *Custody.* Mutual funds are required to place their assets with a bank custodian, whereas hedge funds typically hold their assets with a prime broker. The prime broker uses the fund's securities as collateral for margin borrowing. The drawback of this method is that the fund is fully exposed to the well-being of the prime broker. If the prime broker fails,

the funds become a credit and may not get their assets back for a long time, and then only at a rate of cents for the dollar. Some hedge funds discovered this problem painfully in the bankruptcy of Lehman Brothers, which acted as prime broker for many funds.

- With more mutual funds adopting hedge fund strategies, the question of holding collateral with prime brokers is becoming increasingly relevant. Even when a fund holds its asset in a segregated account with a custodian, it still needs to post collateral with a broker for short selling, option activity, or leveraged transactions. Tri-party agreements between a broker, custodian, and fund provide a way to segregate assets from the broker's balance sheet and hold them in an individually identifiable manner in a segregated custodial account. However, even with this structure the fund retains residual exposure to the broker's balance sheet. At the time of writing, the SEC has taken a particular interest in the United States as to the monitoring and implementation of collateral management to eliminate unneeded excess collateral.

One of the biggest misconceptions about mutual funds is their alleged inability to invest in strategies that are the bread-and-butter business of hedge funds. Many commentators claim falsely that mutual funds cannot use leverage or derivatives and sell short. Today, a number of mutual funds are available that use hedge fund strategies, including merger arbitrage, and engage regularly in short selling, leverage, and the use of derivatives.

The use of short selling was banned for mutual funds for a long time. To this day, the Investment Company Act of 1940 (commonly called the 1940 Act) states that

It shall be unlawful for any registered investment company, in contravention of such rules and regulations or orders as the Commission may prescribe as necessary or appropriate in the public interest or for the protection of investors:

[...]

3. to effect a short sale of any security, except in connection with an underwriting in which such registered company is a participant.

Section 12(a) of the Investment Company Act of 1940

The SEC clarified this provision in 1972 in an interpretive release¹⁷ and stated that despite the wording of the statute, it was the intention of Congress not to limit shorting per se but to prevent the use of short proceeds as equity for further leveraged transactions. Under the current interpretation of the law, short sales are allowed as long as the shares that have been shorted are delivered to the buyer and the mutual fund has segregated sufficient funds

to cover the purchase the shorted assets. The requirement to deliver shares forces a fund to short only shares that can be borrowed and prevents naked short selling. The intent of this rule is to limit the ability of funds to leverage through the proceeds of short sales. Similar rules apply for written options and futures contracts. Nevertheless, the urban myth that mutual funds cannot short continues to make the rounds.

Similarly, U.S. mutual funds can use leverage, albeit not in the form typically used by hedge funds. Leverage is not limited explicitly by U.S. regulations, although there are indirect restrictions through the requirement to have sufficient liquid assets on hand to honor contractual obligations. Effectively, this means that option writing is somewhat restricted, while long option positions do not create contingent obligations that would be restricted and hence can be used to lever. In contrast, in UCITS funds there is an explicit restriction on leverage.

Margin borrowing is a common method for hedge funds to increase their buying and shorting capacity, and it is limited only by the prime brokers' willingness to extend credit. U.S. mutual funds are precluded from using margin borrowing. Instead, they have to use bank lending within strict limitations: The fund must maintain an asset coverage of 300 percent after borrowing. This means that the fund can borrow up to 50 percent of its preborrowing assets from banks. These strict limits on borrowing were imposed because funds also have the ability to leverage through the use of derivatives. The restrictions prevent the excessive use of leverage on top of leverage.

Overall, there are few restrictions on mutual funds to implement strategies such as merger arbitrage that are typically found in hedge funds. Relatively few mutual funds have chosen to implement these strategies. This has more to do with the eagerness of financial intermediaries to sell hedge funds, whose richer management fees allow for higher compensation of the intermediary, than with actual restrictions on the ability of funds to engage in arbitrage strategies.

Chapter 1: Introduction to Merger Arbitrage

1. Wyndham Beawes, “Lex Mercatoria: Or, A Complete Code of Commercial Law; Being a General Guide to All Men in Business.” F. C. and J. Rivington, London, 1754
2. J. Wiertz, “Traité des arbitrages de change : contenant la véritable maniere dont les principales places de l’Europe se servent pour la direction de leurs changes.” Basel, 1725.
3. Patrick Kelly, “The Universal Cambist, and Commercial Instructor: Being a General Treatise on Exchange, Including the Monies, Coins, Weights and Measures of All Trading Nations and Their Colonies : with an Account of Their Banks and Paper Currencies.” Lackington, Allen And Co Finsbury Square, London, 1811.
4. Otto Swoboda, “Börse und Actien,” Verlag Wilh. Hassel, Cologne, 1869. Excerpt translated by the author.
5. Tara Lachapelle: “Short the Rumor Pays 14% on Takeover Tales That Don’t Come True.” Bloomberg, January 11, 2011.
6. Angela Maier: “Siemens plant Milliardenzukauf in den USA.” Retrieved on 8/1/14 <http://www.manager-magazin.de/unternehmen/industrie/siemens-will-us-kompressorenhersteller-dresser-rand-kaufen-a-981221.html>.

Chapter 2: The Mechanics of Merger Arbitrage

1. R. Dai, N. Massoud, D. Nandy, and A. Saunders, “Hedge Funds in M&A Deals: Is There Exploitation of Private Information?” Working Paper, March 2011.

Chapter 3: The Role of Merger Arbitrage in a Diversified Portfolio

1. As an aside, periods of high volatility tend to be accompanied by high trading volumes, at least in developed markets.
2. B. B. Mandelbrot, “The Variation of Certain Speculative Prices,” *Journal of Business* 36 (1963): 392–417.
3. Note that in performance reporting volatilities and returns of less than one year are required to be reported in absolute terms rather than in an annualized manner in order to avoid misrepresentation that can arise from the annualization of particularly favorable short periods of time.
4. Years 1895–1920: Ralph L. Nelson, “Merger Movements in American Industry, 1895–1956,” Princeton University Press, 1959. Years 1921–1990: Statistical Abstract of the United States. U.S. Department of Commerce, years 1956, 1966,

- 1968, 1969, 1974, 1979, 1990, 1992. Years 1991–2013: Mergerstat Review 2014. Factset Mergerstat, 2014.
5. Mergers and actual closing dates selected from Factset Mergerstat. Source of price data: Bloomberg. Only U.S. cash mergers between 1/1/2000 and 6/30/2014 with more than \$1 billion in equity value were included. After eliminating mergers with bad price or deal data a set of 3,599 mergers was used in the analysis.
 6. For example: Gaurav Jetley and Xinyu Ji, “The Shrinking Merger Arbitrage Spread: Reasons and Implications,” *Financial Analysts Journal* 66, no. 2 (2010): 54–68.
 7. Fabienne Cretin, Slimane Bouacha, Stéphane Dieudonné, “Macroeconomic Drivers behind Risk Arbitrage Strategy,” OFI Asset Management, October 2010.
 8. William Dukes, Cheryl Frohlich, and Christoppher Ma, “Risk Arbitrage in Tender Offers: Handsome Rewards—and Not for Insiders Only,” *Journal of Portfolio Management* (Summer 1992): 47–55.
 9. Jan Jindra and Ralph A. Walkling, “Speculation Spreads and the Market Pricing of Proposed Acquisitions,” Dice Working Paper no. 2000–18 (2001).
 10. Sanjai Bhagat, James Brickley, and Uri Loewenstein, “The Pricing Effects of Interfirm Cash Tender Offers,” *Journal of Finance* 42 (1987): 965–986.
 11. M. Mitchell and T. Pulvino, “Characteristics of Risk and Return in Risk Arbitrage,” *Journal of Finance* 56, no. 6 (2001): 2135–2175.
 12. Eliezer M. Fich and Irina Stefanescu, “Expanding the Limits of Merger Arbitrage,” University of North Carolina Working Paper, May 18, 2003.
 13. Malcolm Baker and Serkan Savasoglu, “Limited Arbitrage in Mergers and Acquisitions,” *Journal of Financial Economics* 64, no.1 (2002), 91–115.
 14. Ben Branch and Jia Wang, “Risk Arbitrage Performance for Stock Swap Offers with Collars,” University of Massachusetts, Amherst, Working Paper, 2006.
 15. Ben Branch and Taewon Yang, “Merger Deal Structure and Investment Strategy: Collar Merger,” University of Massachusetts, Amherst, Working Paper, September 2006.
 16. A. Karolyi and J. Shannon, “Where’s the Risk in Risk Arbitrage?” *Canadian Investment Review* 12, no. 1 (Spring 1999): 11–18.
 17. Christoph Maxheim, “Merger Arbitrage in Austria, Germany and Switzerland,” University of Basel Working Paper, January 2007.
 18. Danian Rohani and Christopher Wanzelius, “Takeover Trading Strategies. Is Risk Arbitrage and Reverse Risk Arbitrage Profitable in Europe?” Stockholm School of Economics, Bachelor’s Thesis in Accounting and Financial Management, Spring 2010.
 19. Sudi Sudarsanam and Dzung Nguyen, “UK Evidence on the Profitability and the Risk-Return Characteristics of Merger Arbitrage,” Centre for Research in Economics & Finance (CENREF), School of Management, Cranfield University, January 2007.
 20. Krishnan Maheswaran and Soon Chin Yeoh, “The Profitability of Merger Arbitrage: Some Australian Evidence,” *Australian Journal of Management* 30, no. 1 (June 2005).
 21. Jason Tuan, JinXin Zhang, Jason Hsu, and Zhang Qiusheng, “Merger Arbitrage Profitability in China,” International Conference on Management Science and Engineering, Press of Harbin Institute of Technology Working Paper, 2007.

22. The database also contains returns of Commodity Trading Advisers, with some data starting in the 1970s.
23. On a daily basis, the drawdown is even more severe. Monthly data mask the true extent of volatility of extreme events.
24. It is assumed implicitly that the portfolio is rebalanced monthly.
25. Disclosure: The author of this book also manages this fund.

Chapter 4: Incorporating Risk into the Arbitrage Decision

1. J. R. Hoffmeister and E. A. Dyl, "Predicting Outcomes of Cash Tender Offers," *Financial Management* 9 (1980): 50–58.
2. Mark Mitchell and Todd Pulvino, "Characteristics of Risk and Return in Risk Arbitrage," *Journal of Finance* 6, no. 6 (2001): 2135–2175.
3. Ibid.
4. Eliezer M. Fich and Irina Stefanescu, "Expanding the Limits of Merger Arbitrage," University of North Carolina Working Paper, May 18, 2003.
5. Ben Branch and Taewon Yang, "Predicting Successful Takeovers and Risk Arbitrage," *Quarterly Journal of Business and Economics* 42 (Winter 2003): 3–18.
6. Fich and Stefanescu, "Expanding the Limits of Merger Arbitrage."
7. The author thanks Mr. Ashish Tripathy for his significant contribution to this study.
8. K. M. Moore, G. C. Lai, and H. R. Oppenheimer, "The Behavior of Risk Arbitrageurs in Mergers and Acquisitions," *The Journal of Alternative Investments* (2006).
9. *In re IBP, Inc. Shareholders Litigation*, 789 A.2d. 14 (Del. Ch. 2001).
10. Ben A. Plotkin, "Attacks on Sovereign Unfair, Short-Sighted," *American Banker* (December 2005): 7.

Chapter 5: Sources of Risk and Return

1. Roger G. Ibbotson and Peng Chen, "Stock Market Returns in the Long Run: Participating in the Real Economy," *Financial Analysts Journal* 59, no. 1 (January/February 2003): 88–98.
2. Charles Cao, Bradley A. Goldie, Bing Liang, and Lubomir Petrask, "Risk Arbitrage and the Information Content of Hedge Fund Trading," Working Paper, Penn State University, June 2011.
3. Jim Hsieh and Ralph A. Walkling, "Determinants and Implications of Arbitrage Holdings in Acquisitions," Working Paper, May 2004.
4. Executive stock options are designed to pay off only based on the price appreciation of the stock, not its total return. Managers who receive a significant part of their compensation in stock options will cut their own option payouts if they recommend large dividend payouts. The smaller the dividend, the larger the value of the options. Compensation committees would be well advised to include a total return factor in option awards, for example, through automatic adjustment of the exercise price by dividend payments on the ex-date.

5. There is an undercurrent of companies that pay dividends out of capital, fooling investors into believing that they are highly profitable and helping to prop up the stock price. Such a strategy is bound to fail eventually, at the latest when the stock of capital is depleted.

Chapter 6: Deal Structures: Mergers and Tender Offers

1. *Meso Scale Diagnostics LLC v. Roche Diagnostics GMBH*, 2013 WL 655021 (Del. Ch. Feb. 22, 2013).
2. In *Epstein v. MCA, Inc.*, 516 U.S. 367 (1996).

Chapter 7: Financing

1. This feature is similar to negative amortization or option mortgages.
2. There is some confusion with the terminology “warrant.” I refer here to warrants issued by a corporation to allow the holder of the warrant to acquire newly issued shares from the corporation. The term “warrant” is also used by European investment banks for over-the-counter options sold mainly to retail investors.
3. Jennifer S. Forsyth, “Blackstone’s Slick Flip,” July 26, 2007, retrieved from <http://online.wsj.com/article/SB11854117778978399.html>.
4. The issuer is Lake Acquisitions.
5. Justin Owings and Aaron Krowne, “Citigroup,” <http://bankimplode.com>, accessed on July 15, 2008.
6. *In re Metro Rural Corporation*, Consolidate C.A. No 6350-VCL. Opinion dated March 7, 2014.
7. Dealogic, Global IB Strategy Review. Full Year 2013 Final Results. January 2014.
8. Strictly speaking, Evans was proposing a recapitalization rather than an MBO. The result would have been similar in that he would have owned a majority of the shares.
9. Greenmailers acquired a company’s shares and threatened a takeover until the company acquired their shares at a premium.
10. Poison pills will be discussed in Chapter 8.
11. Schedule 14A filed by Netsmart on February 2, 2007, p. 25, http://sec.gov/Archives/edgar/data/1011028/000110465907006593/a06-25740_3prer14a.htm#OpinionOfNetsmartsFinancialAdviso_134828.

Chapter 8: Legal Aspects

1. Agreement and Plan of Merger Among New Omaha Holdings, Omaha Acquisition Corporation and First Data Corporation dated April 1, 2007, www.sec.gov/Archives/edgar/data/883980/000119312507072154/dex21.htm.

2. Preliminary Proxy of Eddie Bauer Holdings filed on November 24, 2006, <http://sec.gov/Archives/edgar/data/1345968/000089102006000362/v25397prprem14a.htm>.
3. Richard De Rose, Marc Asbra, and Josh Langdon, Houlihan Lokey 2005 Transaction Termination Fee Study. Houlihan Lokey Howard & Zukin (2006), 3.
4. Martijn Cremers, Vinay B. Nair, and Urs C. Peyer, "Weak Shareholder Rights: A Product Market Rationale," Yale ICF Working Paper (October 2006).
5. Lucian A. Bebchuk and Alma Cohen, "The Costs of Entrenched Boards," *Journal of Financial Economics* 78, no. 2 (November 2005): 409–433.
6. Thomas A. Turk, Jeremy Goh, and Candace E. Ybarra, "The Effect of Takeover Defenses on Long Term and Short Term Analysts' Earnings Forecasts: The Case of Poison Pills," *Corporate Ownership & Control* 4, no. 4 (Summer 2007): 127–131.
7. Rights Agreement, October 7, 2003, <http://sec.gov/Archives/edgar/data/1079880/000095013503005101/b48030okexv4w1.txt>.
8. American Community Properties Trust, Amended and Restated Bylaws, October 10, 2007, http://sec.gov/Archives/edgar/data/1065645/000106564507000044/amended_bylaws.htm.

Chapter 9: Management Incentives

1. Consumers are frustrated every day by the disadvantages of hiring just good-enough staff. Retail businesses have cashiers who cannot even give change without the help of an electronic cash register.
2. For example: Jay Hartzell, Eli Ofek, and David Yermack, "What's In It For Me? CEOs Whose Firms Are Acquired," *Review of Financial Studies* 17, no. 1 (2004) 37–61.
3. There are numerous other exemptions, such as payments by qualified retirement plans.
4. The consortium consisted of an unusually large number of private equity firms: Silver Lake Partners, Bain Capital, The Blackstone Group, Goldman, Sachs & Co., Kohlberg Kravis Roberts, Providence Equity Partners, and Texas Pacific Group. While it is not unusual to see two private equity funds team up to make acquisitions of firms worth many billions of dollars in order to spread the risk, the large number of firms joining in one single buyout is unprecedented. To the author's knowledge, by the time of writing, it had not been repeated.
5. See *Pennsylvania Avenue Funds v. Borey*. 569 F. Supp. 2d 1126 (W.D. Wash. 2008).

Chapter 10: Buyouts by Private Equity

1. The term "performance fee" is used for hedge funds, whereas private equity funds refer to this as "carry."
2. Pepper Hamilton and PricewaterhouseCoopers in association with mergermarket.com, "Private Equity Insight: Dividend Recapitalizations" (March 2007).

3. The shareholder meeting to approve the transaction was tumultuous. Police had to be called to remove one irate shareholder from the meeting.
4. Under German takeover rules, holdouts can receive higher payouts than shareholders who tender their shares. This is different from the situation in Delaware and elsewhere in the United States. In this case, the outside shareholder held their shares until after the U.S. IPO.

Chapter 11: Minority Squeeze-Outs

1. This is a philosophical difference from European regulatory regimes on minority squeeze-outs, where fairness of price is codified. Regulations require a lookback at minimum or average historical trading ranges to set a minimum price for a squeeze-out.
2. Annalisa Barrett and Beth Young, "M&A Special Committees: Structure and Compensation," The Corporate Library (December 2006).
3. In some cases, the formed parent then becomes a minority shareholder itself. The most prominent example is the acquisition of General Motors's subsidiary General Motors Acceptance Company (GMAC) by private equity fund Cerberus Capital in 2007. Cerberus acquired 51 percent of GMAC, and GM retained a 49 percent minority interest.
4. *In re Siliconix*, CA No. 18700 (Del. Ch. June 19, 2001).
5. *McMullin v. Beran*, 765 A.2d. 910 (Del. 2000).
6. Based on the financial performance of infoUSA at the time, this valuation appears overly optimistic.
7. Not to be confused with a number of other firms that carry Chaparral in their name, most prominently Chaparral Steel.
8. Beth Young, "It's a Family Affair": Succession Planning, Family Control and the Public Corporation," The Corporate Library (August 2005).
9. Ric Marshall, "Corporate Governance at Family Firms," The Corporate Library (July 2004).

Chapter 12: Government Involvement

1. "Early Termination Notices under the Hart-Scott-Rodino Act," Federal Trade Commission Web site: www.ftc.gov/enforcement/premerger-notification-program/early-termination-notices.
2. Statement of Thomas O. Barnett, Assistant Attorney General, Before the Subcommittee on Antitrust, Competition Policy and Consumer Rights Committee on the Judiciary, March 7, 2007.
3. Ibid.
4. ArbJournal.com Data available to subscribers. Retrieved on February 22, 2012.
5. Arguably, part of the problem was the unwise attempt of GE's CEO, Jack Welch, to obtain support from the U.S. government in lobbying European governments. This angered the EC's antitrust regulators and made a compromise difficult to achieve.

6. Sale and leaseback transactions are a way to monetize real estate.
7. Brad Barber, "Pension Fund Activism: The Double-Edged Sword," University of California Working Paper, 2008.
8. "Micron CFIUS review to be done in context of China's buying spree — UPDATE." DealReporter.com, July 26, 2015.

Chapter 13: Four Ways to Fight Abuse of Shareholders in Mergers

1. Wei Jiang, Tao Li, and Danqing Mei, "Influencing Control: Jawboning in Risk Arbitrage," Columbia University and Warwick University, Working Paper, March 2015.
2. California gives appraisal rights also in stock-for-stock mergers. In some states, appraisal rights are also available for amendments of the certificate of information. For example, New Jersey gives appraisal rights to shareholders of an acquirer if more than 40 percent of shares are issued in an acquisition; Ohio awards appraisal rights also in stock-for-stock mergers.
3. Although the court has some latitude to allocate legal fees, anyone thinking of perfecting appraisal rights should work on the assumption of hefty legal bills. The court generally will spread the cost incurred for experts and similar across all shareholders who seek appraisal. However, this is not a statutory requirement and is at the discretion of the court.

One clever strategy was proposed by Kevin Cameron and Greg Taxin of proxy advisory firm Glass Lewis during the acquisition of Provident Financial by Washington Mutual: An investor can seek appraisal rights and find out how many other investors do so. If there is a sufficient number of other investors, it can be worthwhile for a relatively smaller holder to remain in the process. Otherwise, smaller holders can drop out within the 120-day period and obtain the same consideration as the other shareholders who did not seek appraisal rights. This option can make appraisal rights attractive for holders for whom the cost/benefit calculation is marginal at the outset.

4. Minor Myers and Charles Korsmo, "Appraisal Arbitrage and the Future of Public Company M&A," Brooklyn Law School Legal Studies Research Papers, Accepted Paper Series, Research Paper no. 388, August 14, 2014.
5. DGCL 262(h).
6. Geoffrey Jarvis, "State Appraisal Statutes: An Underutilized Shareholder Remedy," *Corporate Governance Advisor* 13, no. 3 (May/June 2005): 2.
7. Marty Lipton, "Shareholder Activism and the 'Eclipse of the Public Corporation.'" Keynote address at the 25th annual Institute on Federal Securities, Miami, Florida, February 2007.
8. Sara Hansard, "Legg Mason Resisting Class Action Pressure," *Investment News*, March 6, 2006.
9. *Security First Corp. v. U.S. Die Casting and Development Co.*, 687 A.2d 563 (Del. 1997).
10. In many ways, a proxy campaign resembles a political election campaign. There is a long history of candidates building grassroots support with minimal financial investment.

11. Again, an analogy to political elections is applicable. It has been argued that the poor design of ballot papers confused voters in Florida during the 2000 election.

Chapter 14: Investing in Arbitrage

1. Ajay Subramanian, "Option Pricing on Stocks in Mergers and Acquisitions," *Journal of Finance* 59, no. 2 (April 2004), 795–831.
2. Hedge fund Citadel was rumored to have taken similar positions.
3. It is questionable whether the SEC has jurisdiction, because voting is a matter of state corporate law.
4. Arturo Bris, "Short Selling Activity in Financial Stocks and the SEC July 15th Emergency Order," IMD, Lausanne, Switzerland, August 2008.
5. K. Sigurdsson and P. Saffi, "Price Efficiency and Short Selling," London Business School Working Paper, December 2007.
6. A related tax strategy known as dividend stripping is illegal in many jurisdictions.
7. Juliana Nascimento and Warren Powell, "Dynamic Programming Models and Algorithms for the Mutual Fund Cash Balance Problem," *Management Science*, in press.
8. Keith Moore, Gene Lai, and Henry Oppenheimer, "The Behavior of Risk Arbitrageurs in Mergers and Acquisitions," *Journal of Alternative Investments* (Summer 2006): 19–29.
9. Philippe Jorion, "Risk Management for Event-Driven Funds," *Financial Analysts Journal* 6, no. 1 (January/February 2008): 61–73.
10. Adam Tashman, "Modeling Risk in Arbitrage Strategies Using Finite Mixtures," Columbia Practitioner's Conference, April 2007.
11. Currently Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, South Korea, Spain, Sweden, Switzerland, the United Kingdom, and the United States.
12. Bank funds and certain insurance products have a similar structure. Non-U.S. funds often are set up as products under the control of a sponsor.
13. It is likely that regulators will increase these requirements at some point.
14. This requirement is often overlooked by hedge fund proponents. See Rule 502(b)(2)(i)(A) under the 1940 Act.
15. For private equity funds, the performance fee is termed "carry."
16. There are exceptions. Some hedge funds have an even lower frequency and report only quarterly, whereas a small subset of funds reports daily.
17. Release IC-7221 of June 9, 1972, and also IC-10666 of April 18, 1979.

About the Author

Thomas Kirchner, CFA, is portfolio manager of the Quaker Event Arbitrage Fund, a mutual fund that uses merger arbitrage as one of its investment strategies. He launched this fund's predecessor, the Pennsylvania Avenue Event-Driven Fund, as the first event-driven mutual fund in 2003. Previously he worked in fixed income trading at Banque Nationale de Paris S.A. and as a financial engineer for Fannie Mae. He holds a B.Sc. from King's College, University of London, a Diplôme from the Institut d'Etudes Politiques de Paris, and an MBA from the University of Chicago Booth School of Business.

Exercises

CHAPTER 1

1. Using the framework in Table 1.1, explain what types of arbitrage are presented by the following scenarios:
 - a. A holder of metal inventory sells inventory in the spot market and goes long a future contract that is at an extreme contango.
 - b. A bond dealer trades a negative net basis in bond future contract.
 - c. A high frequency trader purchases a stock on one electronic trading venue and hits a bid on another exchange simultaneously.
 - d. A Hungarian homebuyer takes out a mortgage denominated in Swiss francs.
 - e. Bonus points: What is the name of the equivalent hedge fund trade to (d) above?

CHAPTER 2

Consider this merger announcement and review the recent trading activity.

1. Estimate a closing date.
2. Estimate a downside.
3. Calculate a spread.
4. Annualize the spread.

Item 1.01. Entry into a Material Definitive Agreement.

Business Combination Agreement and Plan of Merger

On August 10, 2015, Terex Corporation (“Terex” or the “Company”) entered into a Business Combination Agreement and Plan of Merger (the “BCA”) with Konecranes Plc, a Finnish public company limited by shares (“Konecranes”), Konecranes, Inc., a Texas corporation and an indirect wholly owned subsidiary of Konecranes (“Kone, Inc.”), Konecranes Acquisition Company LLC, a Delaware limited liability company and a newly formed, wholly owned subsidiary of

Kone, Inc. (“Merger Sub”). The combined company that will result from the transaction will be called Konecranes Terex Plc.

Pursuant to the BCA, Terex shareholders will receive 0.8000 of a Konecranes share for each existing Terex share (“Exchange Ratio”). Equivalent terms will apply to instruments granted under Terex’s long-term incentive plans. Upon closing of the transaction, based on current fully diluted shares outstanding, Terex shareholders will own approximately 60% and Konecranes shareholders will own approximately 40% of the combined company. The proposed transaction is structured as a reverse triangular merger under Delaware law, in which Merger Sub, merges with and into Terex, with Terex surviving as an indirect wholly owned subsidiary of Konecranes and Terex shareholders, option holders and other equity right holders receiving Konecranes shares and options in accordance with the exchange ratios set out above as merger consideration (the “Business Combination”).

The BCA includes undertakings by Terex and Konecranes that are typical in similar transactions and include, for example, undertakings by both companies to conduct their businesses in the ordinary course before the completion of the merger, to cooperate in making the necessary regulatory filings, undertakings not to initiate, solicit, facilitate, or encourage any offers or proposals competing with the transaction, and to inform each other and provide each other with an opportunity to negotiate in matters arising from such offers or proposals.

The Boards of Directors of Terex and Konecranes have undertaken, subject, inter alia, to each of their fiduciary duties, to issue recommendations to their shareholders to approve and authorize the consummation of the transactions contemplated by the BCA, including the merger. These recommendations may be modified, cancelled, or changed in certain circumstances to comply with the fiduciary duties of the Terex and Konecranes Boards of Directors, including (i) the receipt of a competing, more favorable offer or proposal, and (ii) the occurrence of certain changes or events that are currently unknown and not reasonably foreseeable.

The BCA may be terminated by Terex or Konecranes under certain circumstances prior to the completion of the merger, including, for example, a material breach by either party of the terms and conditions of the BCA, the Board of Directors of either party not issuing or amending in an adverse manner its recommendation, non-receipt of regulatory approvals, and certain other circumstances.

The parties have further agreed on certain termination fees customary in similar transactions and payable to the other party under certain circumstances, including, for example, a failure by either party to obtain the requisite shareholder approval, or a change or withdrawal of the recommendation by the board of directors of either party.

The transaction is subject to approval by both Terex and Konecranes shareholders, regulatory approvals, the listing of the Konecranes shares or ADS on the New York Stock Exchange or another U.S. national securities exchange reasonably acceptable to Konecranes and Terex, no change in certain legal and tax assumptions, the absence of any material adverse effect occurring with respect to Konecranes or Terex, and other customary conditions. Terex and Konecranes expect to convene meetings of their shareholders to approve the transaction in early 2016. Closing of the transaction is expected to occur during the first half of 2016.

On August 12, 2015, the day after the announcement, shares of Terex traded at \$26.38 while shares of Konecranes traded at €32.50. The exchange rate was 1.1159 U.S. dollar per euro.

CHAPTER 3

1. Discuss the weakness of the implied argument in the following quote from a well-respected financial publication and explain what other macroeconomic factor will be more relevant to merger arbitrage investors.

[Merger arbitrage] funds have attracted renewed attention in part due to the upswing in the global merger and acquisition market. Deal volume spiked 37% in the first half of 2015 to almost \$2.2 trillion compared with the same period last year, according to Dealogic.

Johanna Bennett, "How to Profit as Merger Mania Grips Wall Street," *Barron's* (July 21, 2015)

2. Review the ranking in Table 3.7 and describe what happened in the stock markets during the years when merger arbitrage had its best and worst relative performance.

CHAPTER 4

1. Would a merger with a probability of closing of 75 percent be a candidate for a reverse merger arbitrage? Explain your answer.
2. Discuss why a board might seek a higher reverse breakup fee from a private equity buyer than from a strategic acquirer.

CHAPTER 5

1. Compare closing times of acquisitions and time to failure in the United States and other major jurisdictions.
2. How will withholding taxes on dividends influence merger arbitrage returns? In particular, consider a case where a tax treaty entitles an arbitrageur to a partial reclaim.

CHAPTER 6

Calculate the minimum number of shares that Websense, Inc. had to issue in its top-up option, given the parameters in its 8-K filing dated June 25, 2013. Assume 36,384,990 shares were outstanding at the closing of the tender offer:

Item 3.01 Notice of Delisting or Failure to Satisfy a Continued Listing Rule or Standard; Transfer of Listing

Pursuant to the Merger Agreement, upon the terms and subject to the conditions thereof, Merger Sub commenced the Offer on May 28, 2013 to acquire the Shares at a purchase price of \$24.75 per share, net to the seller in cash without interest thereon and less any required withholding taxes, upon the terms and subject to the conditions set forth in the Offer to Purchase, dated May 28, 2013, and the related Letter of Transmittal, each as amended or supplemented from time to time.

On June 25, 2013, Parent announced the completion of the Offer following the expiration of the initial Offer period at 9:00 a.m., New York City time, on June 25, 2013. According to Computershare Trust Company, N.A., the depositary for the Offer, 29,112,981 Shares were validly tendered and not withdrawn (not including 1,715,607 Shares tendered pursuant to notices of guaranteed delivery). Merger Sub accepted for payment all Shares that were validly tendered and not withdrawn, and payment for such

Shares was made in accordance with the terms of the Offer. Merger Sub also exercised its top-up option (as described below), pursuant to which the Company issued a number of shares of Company Common Stock to Merger Sub, at a price per share equal to the Offer Price, in an amount sufficient to ensure that Merger Sub and the Company could effect a short-form merger under Section 253 of the Delaware General Corporation Law.

[...]

Item 3.02 Unregistered Sale of Equity Securities

In order to complete the Merger, on June 25, 2013, pursuant to Section 1.4 of the Merger Agreement, Merger Sub exercised its top-up option (the “Top-Up”) to purchase shares of Company Common Stock, and the Company issued [...] shares of Company Common Stock (the “Top-Up Shares”) to Merger Sub, at a price per share equal to the Offer Price. Merger Sub paid for the Top-Up Shares by delivery of cash and a promissory note to the Company. The Top-Up Shares, when added to the number of Shares directly or indirectly owned by Parent and Merger Sub at the time of exercise of the Top-Up, represented an amount sufficient to ensure that Merger Sub and the Company could effect a short-form merger under Section 253 of the Delaware General Corporation Law. The Top-Up Shares were issued without registration under the Securities Act of 1933, as amended (the “Securities Act”), in reliance upon an exemption from registration pursuant to Section 4(2) of the Securities Act, as a transaction by an issuer not involving a public offering.

CHAPTER 7

Review the timetable for merger closings in EMC/DELL. Based on the merger announcement reproduced here, estimate a closing date.

On October 12, 2015, EMC Corporation, a Massachusetts corporation (the “Company”), entered into an Agreement and Plan of Merger (the “Merger Agreement”) among the Company, Denali Holding Inc., a Delaware corporation (“Parent”), Dell Inc., a Delaware corporation, and Universal Acquisition Co., a Delaware corporation and direct wholly owned subsidiary of Parent (“Merger Sub”), pursuant to which, among other things and subject to the conditions set forth therein, Merger Sub will merge with and into the Company (the “Merger”), with the Company continuing as the surviving corporation and a wholly owned subsidiary of Parent.

Subject to the terms and conditions of the Merger Agreement, at the effective time of the Merger (the “Effective Time”), each share of Company common stock, par value \$0.01 per share (“Company Common Stock”), issued and outstanding immediately prior to the Effective Time (other than shares owned by Parent, Merger Sub, the Company or any of its wholly owned subsidiaries, and other than shares with respect to which appraisal rights may be properly exercised and not withdrawn) will be cancelled and converted into the right to receive (i) \$24.05 in cash, without interest (the “Cash Consideration”), and (ii) a number of shares of validly issued, fully paid and non-assessable shares of common stock of Parent designated as Class V Common Stock, par value \$0.01 per share (the “Class V Common Stock”), equal to the quotient obtained by dividing (A) 222,966,450 by (B) the aggregate number of shares of Company Common Stock issued and outstanding immediately prior to the Effective Time, plus cash in lieu of any fractional shares (together with the Cash Consideration, the “Merger Consideration”). The aggregate number of shares of Class V Common Stock issued as Merger Consideration in the transaction is intended to represent 65% of the Company’s economic interest in the approximately 81% of the outstanding shares of VMware, Inc. (“VMware”) currently owned by the Company, reflecting approximately 53% of the total economic interest in the outstanding shares of VMware. Upon completion of the transaction, Parent will retain the remaining 28% of the total economic interest in the outstanding shares of VMware. Because any shares with respect to which appraisal rights may be properly exercised and not withdrawn would not receive Class V Common Stock, any proper exercise of appraisal rights would decrease the aggregate number of shares of Class V Common Stock issued in the Merger and increase Parent’s retained interest in the VMware business. Based on the estimated number of shares of Company Common Stock at the closing of the transaction, Company shareholders are expected to receive approximately 0.111 shares of Class V Common Stock for each share of Company Common Stock. Assuming, for illustrative purposes only, a valuation for each share of Class V Common Stock of \$81.78, the intraday volume-weighted average price for VMware on Wednesday, October 7, 2015, Company shareholders would receive a total combined consideration of \$33.15 per share of Company Common Stock. The value of the Class V Common Stock may vary from the market price of VMware given the different characteristics and rights of the two stocks. The rights of holders of

the Class V Common Stock will be governed by (i) the Amended and Restated Certificate of Incorporation of Parent to be filed with the Secretary of State of the State of Delaware and made effective as of immediately prior to the Effective Time (the “Parent Certificate”), (ii) bylaws to be adopted by Parent’s Board of Directors concurrently with the filing of the Parent Certificate (the “Parent Bylaws”) and (iii) a Tracking Stock Policy Statement to be adopted by Parent’s Board of Directors concurrently with the filing of the Parent Certificate (the “Tracking Stock Policy Statement”).

[...]

The completion of the Merger is subject to certain conditions, including, among others: (i) the Company Shareholder Approval, (ii) the absence of an order or law prohibiting consummation of the transactions, (iii) the effectiveness of the registration statement to be filed by Parent with the Securities and Exchange Commission for purposes of registering the shares of Class V Common Stock issuable in connection with the Merger and (iv) the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the receipt of certain foreign antitrust approvals. Moreover, each party’s obligation to consummate the Merger is subject to certain other conditions, including (a) the accuracy of the other party’s representations and warranties (including the absence of a material adverse effect), (b) the other party’s compliance with its obligations, (c) receipt by each party of an opinion of counsel, dated as of the date of the Merger, as to certain tax matters, and (d) the listing of the Class V Common Stock on either the New York Stock Exchange or NASDAQ.

Parent has obtained committed equity financing for up to \$4.25 billion in the aggregate (from Michael Dell and a related trust, MSDC Denali Investors, L.P., MSDC Denali EIV, LLC, funds affiliated with Silver Lake Partners, and Temasek) and debt financing commitments for up to \$49.5 billion in the aggregate from Credit Suisse, J.P. Morgan, Barclays, BofA Merrill Lynch, Citi, Credit Suisse, Deutsche Bank Securities Inc., affiliates of Goldman, Sachs & Co. and RBC Capital Markets, for the purpose of financing the Merger and refinancing certain existing indebtedness. In addition to the above conditions to closing, Parent is not required to consummate the Merger until after completion of a marketing period related to its debt financing. The marketing period will not begin until receipt of customary required information and the satisfaction of certain

conditions to closing. The obligations of the lenders under Parent's debt financing commitments are subject to a number of customary conditions. Parent's debt financing commitments will terminate upon the earlier of the termination of the Merger Agreement in accordance with its terms and December 16, 2016.

Under the terms of the Merger Agreement, the Company may solicit alternative acquisition proposals from third parties until 11:59 p.m. on December 11, 2015 (the "No-Shop Period Start Date"). There can be no assurance that this process will result in any alternative transaction proposals. After the No-Shop Period Start Date, the Company may not solicit or initiate discussions with third parties regarding other acquisition proposals and has agreed to certain restrictions on its ability to respond to such proposals as provided in the Merger Agreement. However, the Merger Agreement contains "fiduciary out" provisions, under which in certain circumstances the Company's Board of Directors may determine to change its recommendation of the Merger or terminate the Merger Agreement. The Company's Board of Directors is obligated to notify Parent in the event of a change in recommendation and to provide certain "match rights" to allow Parent an opportunity to modify the terms of the Merger Agreement in a manner that allows the Board of Directors to continue to recommend the Merger.

A few weeks after the announcement EMC stock traded at \$25.40 and VMWare stock at \$60.45.

1. What was the spread, absolute and annualized?
2. How reliable is this spread, considering that Class V shares and VMWare common stock will not be identical, but Class V will simply be a tracking stock?

CHAPTER 8

Consider this merger announcement from June 19, 2015:

Colt shareholder Fidelity leads GBP 1.7bn takeover offer

FMR and FIL (together, "Fidelity") today announce their intention to make an all cash final offer through Lightning Investors Limited ("BidCo") (an entity jointly owned by FMR and FIL) to acquire the

issued and to be issued share capital of Colt Group S.A. (“Colt” or the “Company”) not currently owned by Fidelity (the “Offer”).

Under the terms of the Offer, Colt Shareholders will be entitled to receive 190 pence in cash for each Colt Share held. This price will not be increased. The Offer values the entire issued and to be issued share capital of Colt at approximately GBP 1.7bn.

[...]

The Offer will be conditional upon, amongst other things:

- the approval by a majority of Independent Colt Shareholders voting on a resolution to terminate the Relationship Agreement; and
- BidCo receiving acceptances (which are not, where permitted, withdrawn) in respect of Colt Shares which, when aggregated with Fidelity’s existing shareholdings in Colt, represent not less than 95 per cent. in nominal value of the issued or to be issued Colt Shares (or such lesser percentage not being less than 80 per cent. as BidCo may decide of the issued share capital of Colt) and not less than 95 per cent. (or such lesser percentage not being less than 80 per cent. as BidCo may decide) of the voting rights carried by those Colt Shares.

[...]

BidCo has received irrevocable undertakings to accept or procure acceptance of the Offer and to vote in favour of the Shareholders Resolutions and against any Impeding Resolution from Ruffer LLP and Standard Life Investments in respect of 70,148,176 Colt Shares representing, in aggregate, approximately 23.4 per cent. of Colt’s issued share capital held by Independent Colt Shareholders; and in aggregate, approximately 7.8 per cent. of Colt’s issued share capital.

1. What percentage of the independent shareholders must vote in favor of the transaction in order to approve it?
2. Now assume this were a scheme of arrangement requiring the approval of $66\frac{2}{3}$ of shareholders. Under this scenario, what percentage of the independent shareholders needs to vote in favor of the transaction in order to approve it?
3. Now assume that no more than 4 percent of shareholders overall can vote against this merger. What percentage of independent shareholders would have to vote against to block the transaction so that the overall level reaches 4 percent?

CHAPTER 10

Evaluate risks in the following private equity transaction by reviewing the press release as well as a statement on the acquirer's website:

Campus Crest Communities (NYSE: CCG) announced that it has entered into a definitive merger agreement with affiliates of Harrison Street Real Estate Capital, LLC ("Harrison Street") pursuant to which Harrison Street will acquire all issued and outstanding shares of common stock of Campus Crest in a transaction involving total estimated merger consideration of \$7.03 per share, which amount includes net sale proceeds currently estimated to be valued at up to \$0.13 per share (based on current exchange rates) from the separate sale of the Company's ownership interest in its evo Montreal joint venture ("Montreal Sale"). Including the assumption or repayment of various indebtedness of Campus Crest, the overall transaction value is \$1.9 billion. The merger agreement was unanimously approved by the Board of Directors of the Company.

Under the terms of the merger agreement, the final merger consideration will be determined following the closing of the Montreal Sale, currently expected to occur before October 30, 2015, pursuant to a sale agreement with the Company's joint venture partner (the "Montreal Sale Agreement"). Assuming the Montreal Sale is consummated on the terms and conditions set forth in the Montreal Sale Agreement, the total per share consideration to be received by Campus Crest shareholders is estimated to be \$7.03 per share, consisting of \$6.90 per share in cash (the "Cash Consideration"), plus a pro-rata portion of the net proceeds from the Montreal Sale (the "Contingent Consideration"), currently estimated to be \$0.13 per share based on current exchange rates.

The Cash Consideration and the Contingent Consideration could be considerably less if the Montreal Sale is not closed prior to the closing of the merger, or if the Company sells the Montreal joint venture interests on terms other than those currently provided for in the Montreal Sale Agreement. If the proceeds of the Montreal Sale are insufficient to fully satisfy the outstanding debt on the properties owned by the Montreal joint venture, then the Company would be obligated to contribute to the repayment of the deficiency in accordance with its outstanding guaranty of the debt, currently

approximately CAD\$56.0 million. In such event, the Cash Consideration per share would be reduced by a pro-rata portion of the amount necessary to discharge the guaranty.

If the Montreal Sale does not occur prior to the closing of the merger with Harrison Street, the merger agreement provides for the creation of a non-transferrable contingent value right (“CVR”) whereby shareholders will receive approximately \$6.23 per share in cash at the closing of the merger (based upon current exchange rates) and one CVR per share. If the CVRs are issued, a representative of the shareholders will be authorized to conduct a sale of the Montreal joint venture and each CVR will represent a share of the net proceeds from the sale of the Montreal joint venture and release of the Company’s guaranty of the joint venture’s indebtedness. Though dependent upon the final sales price of Campus Crest’s interest in the evo Montreal properties, the Company currently estimates the value of the CVR at approximately \$0.80 per share based on the expected sales price of the Montreal properties and current exchange rates. If the net proceeds from the sale of the Montreal properties are lower than expected or are not sufficient to pay off the guaranteed indebtedness, then the value of the CVR could be substantially less.

The total estimated consideration represents a 24 percent premium over the most recent closing stock price on October 16, 2015, and a 35 percent premium over the Company’s 60-day volume weighted average price.

Richard Kahlbaugh, Non-Executive Chairman of Campus Crest, said, “Beginning in October of 2014, our Board initiated an undertaking to simplify the business model, change executive management and maximize shareholder value through a comprehensive strategic review process. We are pleased to announce that after thoroughly analyzing numerous proposals, including a number of qualified potential buyers and a range of alternative transactions, the Board unanimously determined that this transaction is the best course of action in achieving our goal to maximize shareholder value. We are pleased that Harrison Street recognizes the value inherent in our portfolio of high-quality student housing properties.”

“As a significant owner of student housing assets, we are pleased to add these attractive properties to our portfolio. The need for

high-quality off-campus housing continues to grow and we believe this sector has strong long-term fundamentals that will drive sustainable returns,” said Harrison Street co-founder, president and CEO Christopher Merrill.

Approvals and Anticipated Merger Closing

Although completion of the merger is contingent upon customary closing conditions, the transaction is not subject to a financing condition. The Company will convene a special meeting to seek the approval of Campus Crest shareholders. The transaction is currently anticipated to close during the first quarter of 2016.

In connection with the closing of the transaction, the parties intend that Campus Crest’s \$100,000,000 of 4.75% Senior Exchangeable Notes Series A Notes due 2018 will be repaid, and that Campus Crest’s \$152,500,000 of 8.0% Series A Cumulative Redeemable Preferred Stock will be redeemed.

Website Statement

Harrison Street said that the total purchase price represented a 24 percent premium over Campus Crest’s recent closing stock price on October 16, and a 35 percent premium over the company’s 60-day volume weighted average price. The transaction is scheduled to close during the first quarter of 2016. It was unclear at press time whether the deal was done on behalf of Harrison Street’s latest fund, Harrison Street Real Estate Partners V, which attracted a total of \$850 million in January.

The Campus Crest acquisition represents Harrison Street’s first takeover of a publicly traded company, and its largest single investment in student housing. The size of the deal nearly doubles the number of student housing beds that Harrison Street has developed or acquired. Prior to the transaction, Harrison Street developed or acquired more than 63,000 beds, but the takeover of Campus Crest will add approximately 42,000 beds to its portfolio.

A

- ABN AMRO Holding NV, hostile acquisition, 180–181
- Accipiter Capital Management, 114
- Accounting principles, management choice, 315
- Accounts, separation, 468–469
- Ackman, William, 186, 412
- Acquisition, 137t, 138t, 188
- Actively managed portfolio, unmanaged index (usage), 95
- Active premium, 85
- Activist
 - appraisal rights, 416–427
 - class actions, 427–431
 - investor requests, 339
 - legal tactics, 416–432
 - merger arbitrage, 412–416, 415f
 - merger arbitrageurs, tactics, 414
 - private equity replacement, 338–340
 - proxy campaigns, 433–434
 - public opposition, 433–434
 - rise, 411–412
 - tender offers, shares (withholding), 434
- Administrative Measures on the Acquisition of Listed Companies, 76
- ADP. *See* Approximate Dynamic Programming
- Advisory Research, Longs ownership, 434
- Aegis sale, 331
- Aer Lingus Plc, International Consolidated Airlines Group, S.A. bid, 402
- A.G. Barr p.l.c. acquisition, 197
- Airtran Holdings, Inc., Southwest Airlines Co. acquisition, 47e–48e
- Allergan Inc., 232, 412
- Allserve Systems plc, 331
- Alpha, 70, 442
- Alstom Economy, General Electric (hostile approach), 402
- Alterra Capital Holdings Ltd, Markel Corp. acquisition (announcement), 38e–39e
- Amalgamation Agreement, 194–195
- Amalgamations, 188
- American Capital Strategies (ACAS), 335–336, 336f
- American Community Properties Trust, filing, 283
- American Depository Receipts (ADRs), trading, 290
- American Physicians Capital (ACAP), 114
- Anheuser-Busch Cos., 181f, 183
- Annualized after-tax return, 168
- Annualized net return, 139
- Annualized return, 26f, 163
- Annualized spread, increase, 37
- Antitrust, 367–382
 - problems (mergers), 112
 - United States antitrust rules, 367–369, 380
- Appraisal actions
 - cases, 426
 - time frame, 420
 - outcome, 422t–424t
- Appraisal arbitrage, 418, 420
- Appraisal rights, 416–427
- Approximate Dynamic Programming (ADP), usage, 458
- Arbitrage, 3–5, 8–10, 8t
 - activity, selling pressure, 34
 - appraisal arbitrage, 418
 - decision, risk (incorporation), 103
 - expected return, 139–140
 - hedge funds, usage, 469–473
 - indices, 463–468
 - investment, 168, 435
 - liquid alternatives, 469–473
 - multiple arbitrage, 219, 337–338
 - portfolio, construction, 66
 - positions (depression), annualized return (impact), 163
 - public intervention, 111–112
 - spread, 62, 171t
 - term, 3, 18f
- Arbitrage Fund (ARBFX), 95
- Arbitrageurs, 414
 - activities, curtailing, 9
 - cash, receipt, 454

- Arbitrageurs (*Continued*)
 concentrated arbitrageurs, 77
 diversified arbitrageurs, 77
 holdings, target company example, 154t
 legal aspects, 250
 liquidity premium, earning, 146
 participation, benefits, 153, 155
 returns, extension risk (impact), 163
 Arbitration, definition, 3
 ARCO Chemical, Lyondell Petrochemical
 Company acquisition, 348
 Arnhold & S. Bleichroeder, stock sale, 338
 Arrangement, 188
 schemes, 196–197, 196e–198e
 Assets, 226–227
 acquisitions, poison pill alternative, 283
 management, 79f
 monetization, 339
 Assets under management (AUM), strength,
 78, 80
 Asymmetric payoff distribution, 15f
 Atlas Corporation, Blasius Industries (court
 battle), 275
 Atmi, Inc., 304e–310e
 Australian Corporations Act (2001), 32
 Australian Securities and Investments
 Commission, Regulatory Guide 25
 Takeovers, 268
 Australia, public company mergers
 (timing), 162t
 Austrian Traded Index (ATX) benchmark, 75
 Austria, public company mergers
 (timing), 163t
 Autonomy Corporation, 18–19, 21–22
 common stock, price/volume, 147f
 daily price changes, 53f
 HP acquisition, 19e, 25, 51, 144, 163
 merger, spread (evolution), 145f
 preacquisition stock level, 132f
 pre/postmerger announcement, stock
 price, 20f
 Avago Technologies, LSI Industries
 (agreement), 398
 Average acquisition premia, 137t
 Average annualized merger arbitrage
 spread, 61e
 AXA Private Equity, backing, 115
- B**
 B2Gold Corp, CGI Mining Ltd merger,
 27–28, 31f, 31t, 33f
 Baker, Malcolm, 72
 Bankers, role, 241
 Banks, 225–226, 240–246
 Barclay hedge, 77–78
 Barclays Aggregate Bond Index, 89
 BASF acquisition proposal, 218f
 Bass, Robert M., 242
 BCG Partners, press release, 327
 Bergstein, David, 230
 Berkshire Hathaway/3G Capital acquisition,
 reverse triangular merger, 193e–194e
 Bessemer Venture Partners, backing, 247
 Best price rule, 286–287
 Beta+/Beta–, 83
 Bidders, 208t, 214, 331–333
 Bidding wars, 180–186, 185f
 Bid/offer spreads, 151, 452
 Bid premium, impact, 105
 Black-Scholes
 equation, 439
 model, 438
 option prices, basis, 70
 process, usage, 438–439
 Block, Carson, 186
 Blunt, Matt, 386
 BMO Financial Group (BMO), indicative
 offer, 261
 Board of directors, 270–271, 346–347
 fiduciary duties, 412–413
 staggered boards, impact, 280–281
 Bonds, 94f, 224–229
 Bonomi, Andrea, 115
 Books/records, inspection, 431–432
 Borrow costs, increase (trading/
 anticipation), 68
 Borrowing, usage, 174, 437
Borruso v. Communications Telesystems
 Intern., 427
Borse und Aktien (Swoboda), 4–5
 Branch, Ben, 73, 106
 Breakup fees, 118f–120f, 124f–127f,
 117–130
 averages, 122t, 123t
 avoidance, 129
 buyer breakup fees, 118
 Cove Energy, Shell acquisition, 128e
 usage, 123, 125
 Bridge loans, 226–227
 Bright line test, 204
 British Energy Group plc, EDF acquisition,
 238
 Britvic PLC, A.G. Barr PLC acquisition
 (arrangement scheme), 197e–198e
 Broadridge, 433

- Brokerage commissions, 450–452
Brokerage firms, revenue source, 37
Brokerage withdrawal levels, negative
 alpha, 443t
Broker/dealers, swap involvement, 441
Brookfield DTLA Fund Office Trust Investor Inc., 149
Brookfield Office Properties acquisition, 149
Brownian motion, 438
Burger King, 200e–201e, 207–209
Burton, Joan, 402
Busch IV, Adolphus A., 359
Busch IV, August A., 359
Business conditions, changes,
 108–110
Business interruption fee, 121
Business judgment rule, 269
Buy-and-hold strategy, 180
Buybacks (leveraged recapitalizations), 282
Buyers, 18
 breakup fees, 118
 control (concern), boards (impact),
 345
 takeovers, 266, 266e–267e
Buyer/target size (mergers), 112
Buyouts, 116, 188
 financial engineering, comparison,
 336–338
 private equity buyouts, 328
- C**
Cagle's Inc., board (family letter), 359e–360e
Callan Chart, 87
Canada
 breakup fees, 126f
 Investment in Canada, 398
 mergers, 122–123, 398–401
 net benefit test, 399
 provinces, incorporation laws, 387–394
 public company mergers, timing, 160t
Canadian Pacific Railway, 340
Canadian Securities Administrators
 (CSA), 401
Cao, Charles, 155
Capital, 77, 174, 339
Capital Asset Pricing Model (CAPM), 421
 framework, usage, 83
 model, 69–70
 risk measurements, 85
 statistics, 87t
Caracal Energy Inc., Glencore Xstrata plc
 acquisition attempt, 287
CARs. *See* Cumulative abnormal returns
Cash holdings, 454–455
Cash management, 456–458
Cash mergers, 16f, 17, 21f
 capital, investment, 62
 covered call writing, usage, 176
 percentage, 59f
 stock-for-stock mergers, contrast, 144
Cash position, management, 453–460
Cash/stock, ratio, 41
CASSIDI, 373
CCA Industries, Dubilier & Co. acquisition,
 13
Cede & Co., 425, 433
Celanese AG, Blackstone acquisition,
 337–338
Celesio AG, 157, 221
 convertible note (terms/conditions),
 222e–223e
Celesio AG/McKesson/Dragonfly,
 domination/profit sharing agreement,
 343e–344e
Center for Research in Security Prices
 (CRSP) data, 459
Central Freight, related party transactions,
 324e–325e
CFD. *See* Contracts for difference
CFIUS. *See* Committee on Foreign
 Investments in the United States
CGI Mining Ltd, B2Gold Corp. merger,
 27–28, 169–170
 cash flows, 31t
 spread, evolution, 33f
 stock prices, 31f
CGI Mining Ltd, B2Gold Corp.
 stock-for-stock merger (arbitrage spread
 improvement), 171t
Change-of-control
 clauses, 253
 covenants, 217
 provisions, 220–221, 359
Change to Win (CrW), 407
 union representation, 434
Chapparral Resources, 352–354, 354f, 409
Chasing returns, 436
Chicago Board Options Exchange, 437
Children's Investment Fund (TCI), 397–398
China
 administrations, 403
 commissions, 403
 companies, 117, 186–187
 laws, impact, 402–405

- China (*Continued*)
 Ministry of Commerce (MOFCOM), 403–405
 National Development and Reform Commission (NDRC), 403
 State Council (China's Cabinet), 403
 CIBC financing, 333
 Class actions, 427–431
 filing, 429
 Clayton Act of 1914, 56
 Clearing (brokerage commission), 451
 CLOs. *See* Collateralized loan obligations
 Closing, 105–130, 155–165
 Club Med, management (talks), 115
 CNMV. *See* Comision Nacional del Mercado de Valores
 Coast Financial Holdings, acquisition (merger consideration adjustment), 233e–236e
 Coercion, forms, 345–346
 Cogent hedge, 78
 Collars, 42–49
 deals, 73
 Collateralized loan obligations (CLOs), 225
 Comision Nacional del Mercado de Valores (CNMV), 264
 Commissione Nazionale per le Società e la Borsa (CONSOB), 264
 Commissions, 177–180
 Committee on Foreign Investments in the United States (CFIUS), 395–398
 Company
 books/records, inspection, 431–432
 company-specific contracts, 253
 control, 323–327, 355
 life, late stages, 413f
 Completion probability, bid premium (impact), 105
 Compound interest, calculation, 24
 Conde, Cristobal, 312
 CONSOB. *See* Commissione Nazionale per le Società e la Borsa
 Constant percentage spread, losses, 35t
 Contingent claims analysis, usage, 69
 Contingent value rights (CVRs), 236–240, 238t
 Contracts for difference (CFD), 442
 Convertible notes, terms/conditions, 222e–223e
 Cooper Chengshan Tire, joint venture, 408
 Cooper Tire & Rubber Company, Apollo Tyres takeover, 408
 Corporate Library, The, 347, 358–359
 Corporations, 56, 256
 books/records, inspection, 431–432
 tax policy, 382–384
 Correlation coefficients, 64–65
 Correlation, importance, 51
 Council Regulation (EC) No 139/2004, 381
 Court decisions, impact, 252
 Cove Energy, Shell acquisition (breakup fee), 128e
 Covered call writing, 174–177, 175f
 Credit Agricole Structured Asset Management Center for International Securities and Derivatives Markets (CASAM CISDM), 78, 80
 Credit crunches, triggers, 248
 Credit risk management, merger arbitrage (comparison), 14–15
 Creeping acquisitions, prevention, 284, 286
 Creeping takeovers, 284–286
 Cross-border mergers, tax considerations, 383
 Cross-border transactions, 290–291
 CSRC. *See* China Securities Regulatory Commission
 CtW. *See* Change to Win
 Cumulative abnormal returns (CARs), 207
 Cumulative abnormal stock returns, 208t
 Customer relationship management (CRM) label, 330
 CVRs. *See* Contingent value rights
 Cypress Communications, Arcapita, Inc., acquisition, 395
- D**
- Dai-ichi Life Insurance Company, Tower Australia (arrangement scheme), 196e–197e
 Daily returns, 54f, 56f
 Danisco A/S, E.I. du Pont de Nemours acquisition, 115
 Dark pools, 153
 D.B. Zwirn & Co., 230
 DDQs. *See* Due diligence questionnaires
 Deal spread, 143–145
 Deal structures, 188
 Debt funding, 220–232
 assets, 226–227
 bank loans, 225–226
 bonds, 226–229
 bridge loans, 226–227
 financing, 229–232

- mezzanine debt, 227–228
 - noncore businesses, sale, 227
 - selling shareholders, payment, 222
 - target, balance sheet (cash availability), 227
 - transaction costs, 222
 - Debt repayment, control provisions (change), 220–221
 - de Carvalho-Heineken, Charlene, 355–356
 - Decision trees, usage, 140
 - DEFM14A filings, Wilshire Enterprises (table of contents), 212e–213e
 - Delaware, General Corporate Law, 209, 431
 - Delaware General Corporation Law (DGCL), 202, 418–419, 256
 - Dell, 113–114, 340
 - Dell, Michael, 340
 - Delta hedging, 45, 73
 - Delta-neutral hedging strategy, 49
 - Derivatives, usage, 437
 - Deutsche Bank, notes (issuance), 331
 - Deutscher Aktienindex DAX, performance, 75
 - DGCL. *See* Delaware General Corporation Law
 - Directive on Takeovers, 258
 - Direct merger, 190f
 - Discounted cash flows (DCF), 420–421
 - Diversification, importance, 89
 - Diversified portfolio, merger arbitrage, 51, 88–97
 - Dividends, 166–169
 - dividend-paying stocks, 143
 - gross return, calculation, 38
 - payments, 449, 450f
 - Dodd-Frank regulations, 305–306
 - Dolphin Limited Partnership, 349–350
 - Domination agreements, 342–343
 - example, 343e–344e
 - Double-taxation treaty, 464
 - Dow Jones, NewsCorp bid, 281
 - Downmarkets, consideration, 70
 - Downside deviation, 87
 - Downside risks, 137, 139
 - measures, 88t, 467t
 - usage, 176
 - Dresser Rand Group, 12, 13f
 - Dubai Ports World, P&O sale, 395
 - Due diligence (mergers), 116–117, 333
 - Due diligence questionnaires (DDQs), 436
 - Duquesne Light Co., preferred stock series, 149
 - Dynegy, due diligence process, 117
- E**
- Earnings before interest, taxes (EBIT), 247
 - Earnings before interest, taxes, depreciation, and amortization (EBITDA), 11, 237, 247
 - eBay, 340
 - ECNs. *See* Electronic communication networks
 - Eddie Bauer Holdings, buyout, 276
 - EDGAR system, 210, 211, 216
 - Efficient frontier, 94f, 97f
 - Efficient market theory, 332
 - Eisner, Michael, 332, 428
 - Elan, Royalty Pharma hostile bid, 283
 - Electronic communication networks (ECNs), 151, 153, 451
 - Elliott Associates, 416
 - El Paso/Kinder Morgan (KMI) merger, percentage spread, 67f
 - Empty voting, 446
 - Energy Partners, LP acquisition, 40e
 - Enron, 117, 323
 - Enterprise M&A Fund (EMAXX) (EMAAX), 95, 97
 - Entire fairness, requirements, 271–272
 - Equity, 231–232, 312–315
 - Equity Office Properties Trust, acquisition, 229
 - Esmark, 405–406
 - Esmark, stock price, 407f
 - ETFs. *See* Exchange-traded funds
 - Europe, 382t, 401–402
 - European call option price, closed-form solution (derivation), 438–439
 - European civil law jurisdictions, 251
 - European Commission (EC) rules, 251–252
 - European Union (EU), Takeover Code, 258
 - Evans, Edward P., 242–243
 - Excess merger arbitrage returns, 71f, 74f
 - Excess returns, 69, 73
 - Exchange Ratio, 44, 47
 - Exchange regulations, impact, 252–253
 - Exchange-traded funds (ETFs), 465
 - Execution fee (brokerage commission), 451
 - Execution-only brokers, arbitrageur confirmation requirement, 447
 - Executives, payments, 305
 - Exit rights, 291–292
 - Exon-Florio Amendment, 395
 - Extension risk, 163, 206

F

Fagan, Bill, 427
 Fairness, 246–248, 269–270
 Fama-French three-factor model, 75
 Family control, 355–360
 Fastow, Andrew, 323
 F&C Asset Management plc, rumor response, 261e
 Federal Deposit Insurance Corporation (FDIC) filings, 373
 Fed Funds rate, basis, 446
 FEMSA (strategic investor), 356
 Fiat S.p.A., Chrysler (merger), 291–292
 Fich, Eliezer, 72
 Fidelity National divestitures/Lender Processing Services merger, Federal Trade Commission announcement, 370e
 Fiduciary duty litigation, breach, 417
 Fiduciary out, 276
 Financial engineering, buyouts (comparison), 336–338
 Financing, 108, 217, 232
 Finley, Johan P., 231
 First Data, KKR buyout, 273
 Fixed-income arbitrage, 464
 Fixed-rate collar, implied options, 49
 Fixed-share collars, 42, 49e, 73
 Fixed-value collars, 42, 47f
 Foodarama Supermarkets, shareholder payment, 430
 Foreign Investment Review Agency, 399
 Form 8-K, 210, 288
 Forward triangular merger, 190, 191f, 193e
 France, 163t, 262e, 266e–267e
 Francisco Partners, 312
 Fraud (mergers), 116–117
 Freeze-out, 272, 282–283
 FTC Horizontal, merger investigations, 374t

G

GAAP. *See* Generally accepted accounting principles
 Gabelli Asset Management, 416
 Gain deviation, 87
 Gamco Investors, Inc., 417
 GARCH models, usage, 50
 Genentech, 183, 183f
 General collateral, trading, 66
 General Corporate Law. *See* Delaware
 General Corporations Law. *See* Delaware
 Generally accepted accounting principles (GAAP), 227, 245

Genesco, 109–110, 244–245
 Genesis Healthcare, NCS (merger agreement), 274–275
 Germany, public company mergers (timing), 163
 GFI Group, 199, 326–327, 326e
 Given Imaging Ltd, Covidien acquisition, 289
 Glass-Steagall Act (1933), 240
 Global merger legislation, types, 250
 Going-private transactions, 215–216
 Golden parachutes, 299, 306e–310e
 Goldie, Bradley A., 155
 Goldman Sachs Group, breakup fee (avoidance), 129
 Goldsmith, James, 276
 Goodman Global, Hellman & Friedman LLC acquisition, 230
 Gordon, Angelo, 430
 Gordon dividend growth model, usage, 421
 GrainCorp Limited, 25, 111, 166
 Gramm-Leach-Bliley Act of 1999, 240
 Great Depression, 240
 Greenwich Alternative Investments, 78
 Gross return, calculation, 38
 Gross spreads, 143
 Grupo Modelo, involvement, 184
 GTECH, shareholder exit rights, 292
 Guoco Group, Hong Leong Company acquisition, 268e, 356–357
 Gupta, Vinod, 349, 350–351, 350f

H

Haji-Ioannou, Stelios, 256
 Harper, Stephen, 400
 Hart-Scott-Rodino Act, 202
 Hart-Scott-Rodino Antitrust Improvements Act (1976) (HSR), 368, 369
 Health Care REIT, 44e, 45f
 Hedge Fund Research (HFR), 78, 82–83, 94
 Hedge Fund Research (HFRI/HFRX), 80
 Hedge funds, 100f, 468–473
 financing, 229–230
 monthly performance, 81f
 returns, 66, 77
 short biased hedge funds, performance, 444t
 Hedges, short sales (comparison), 169–172
 Hedging, 45, 49
 Heine, Max, 95
 Helaba Invest Kapitalanlagegesellschaft, 430

Hellman & Friedman LLC, 230
 Hennessee Group, 78
 Herfindahl-Hirschman Index (HHI), 372, 374t
 Hewlett-Packard (HP), 19e, 184
 Heyman, Samuel, 276
 HFRI Equity Hedge Short Biased Index, 444–445
 HFR Index, 94f
 High-yield bonds, redemption requirements, 221
 Historical time series, spreads (calculation), 60e
 Historical volatility, 50
 H.J. Heinz, Berkshire Hathaway/3G Capital acquisition (reverse triangular merger), 193e–194e
 Hockey, Joe, 111
 Holding companies, 355–357
 Hong Kong Stock Exchange, 355
 Horizontal merger guidelines, 371
 Ho, Stanley, 387
 Hostile bids, 14, 180–186
 Hostile mergers, ubiquity, 116
 Hostile takeover transactions, ranking, 182t
 Hostile transactions, 105
 Hsieh, Jim, 155
 HSR. *See* Hart-Scott-Rodino Antitrust Improvements Act
 HSR Transactions/second requests/merger enforcement actions, 371t
 Hudson City Bancorp, M&T Bank (merger), 373

I

IBP/Tyson Food decision (2001), 109
 ICA. *See* Investment Canada Act
 Icahn, Carl, 113–114, 276, 416
 Idea generation (brokerage commission), 451
 Illiquid investments, 334
 Illiquid stocks, liquidity premium (arbitrageur earnings), 146
 Imaging Ltd./Covidien merger agreement, voting conditions, 289e–290e
 Implied volatility, 177f
 Incorporation laws, 385–394
 Indemnification, 299
 Independence Community Bank, purchase, 116
 Index membership, impact, 106
 Index scenario probabilities, 465t
 Individual Retirement Accounts (IRAs), 435

Inflection point, 98
 Information ratio, 85
 Information Resources, acquisition, 236
 Information statements, 209
 infoUSA, 349–351, 350f, 352f
 Ingersoll-Rand acquisition (account), 34e
 Initial public offering (IPO), 314
 Insider trading, 22–23
 Insight Venture Partners, backing, 247
 Interest, 24
 Interest rates, 97–98, 99f, 100f
 components, 64
 differential, 442
 merger arbitrage spreads, correlation, 65t
 spreads, negative alpha, 443t
 Interlocks, impact, 355
 Intermediate loans, usage, 226
 Internal rate of return (IRR), calculation, 25–26
 Internal Revenue Code (IRC), 169, 192
 International anti-competition merger regulation, 380–382
 Investment Canada Act (ICA), 398–399
 Investment Company Act of 1940, 457, 472
 Investments, 10–11, 472
 accounts, separation, 468–469
 banks, conflicted role, 240–246
 long/short approach, 180
 trading, contrast, 435–436
 Investment strategies, 90t–93t, 179
 IQ Index, 466f, 467t
 IRAs. *See* Individual Retirement Accounts
 ISDA agreements, 441–442
 iShares Core Aggregate Bond (AGG), 95
 ISS A/S buyout, 253
 ISS Global A/S 4.75% Bond, price, 254f
 ISS Global A/S acquisition, 221
 Italy, takeover timetables, 264f–265f

J

Jarvis, Geoffrey, 425
 J.C. Flowers, 121, 245
 Jiang, Wei, 414, 418
 Jorion, Philippe, 462
 Jump diffusion process, 438
 Junk bonds, 228, 248

K

Karolyi, Andrew, 75
 Kayak Software Corp., Priceline.com merger agreement (forward triangular merger description), 193e

KBW, Inc., Stifel Financial Corp, 43–44, 43e
 Kelly, Patrick, 3
 Kinder Morgan (KMI)/El Paso merger,
 percentage spread, 67f
 King Pharmaceuticals, Mylan Laboratories
 (merger failure), 446
 Knight Trading (NITE), 152
 Kohlberg Kravis Roberts (KKR), 129,
 243–244
 Kravis, Henry, 276
 Kuwait Petroleum Corporation,
 stock sale, 338

L

Lafarge North America, performance, 157f
 Lafarge S.A., 156
 L'Arche Green NV, 355–356
 Large-scale mergers, problems, 111
 Layered ownership structures, 358
 Lazard Freres, 242–243
 LBOs. *See* Leveraged buyouts
 Leaseback financing, 229
 Lefèvre payoff diagram, 16f
 Legal aspects (mergers), 250
 Legal tactics, 416–432
 Lender Processing Services merger/Fidelity
 National divestitures, Federal Trade
 Commission announcement, 370e
 Leverage, 437–443
 arbitrageur usage, 173
 impact, 172–174
 levels, negative alpha, 443t
 short selling, combination, 443f
 usage, 473
 Leveraged buyouts (LBOs), 220,
 245, 461
 Leveraged loans, 249f
 Leveraged recapitalizations (buybacks), 282
 Levevre, Henri, 15
 Lew, Jack, 398
Lex Mercatoria, 3–4
 Liang, Bing, 155
 Life Technologies Corporation, Thermo
 Fisher acquisition, 165
 Linear mean-variance analysis,
 inappropriateness, 70
 Lipper TASS, 78
 Lipton, Martin, 427
 Liquid alternatives, 469–473
 Liquidity, 146–153
 event, 410–411
 representation, 453
 Li, Tao, 414, 418

Litigation, types, 428–429
 Loans, 225–226
 Local market price, acceptance, 9
 London Interbank Offered Rate (LIBOR),
 24, 37, 77
 spread, 174, 226, 441
 U.S. dollar LIBOR, basis, 464
 Longs Drug Stores, CVS Caremark
 (acquisition bid), 406–407, 434
 Long/short merger arbitrage, gross return
 (calculation), 38
 Long-term capital gains, tax rate, 167
 Long-term incentives, 298
 Long-term investors, interest (absence), 146
 Long-term loans, usage, 226
 Loss(es), 104, 130–139
 deviation, 87
 spreads, widening (impact), 163
 Low-volatility strategy, 469
 LTV Corporation, bankruptcy, 248

M

MacDonald Detwiler and Associates
 (MDA), Alliant Techsystems acquisition,
 399
 Macmillan, sale, 332
 Macquarie Bank, 186
 Maheswaran, Krishnan, 75
 Managed Accounts Research (MAR), 78
 Management, 315, 328
 compensation, 298–312, 339
 employment agreements, control
 provisions (change), 298–299
 incentives, 293
 private equity buyouts, management
 interest, 312–315
 Management buyouts (MBOs), 220, 293,
 313–323
 Mandatory bids
 acquisitions, 284–286
 rules, characteristics, 285t–286t
 Margin borrowing, 473
 Marked-to-market losses, 164, 357
 Markel Corp., acquisition (announcement),
 38e–39e
 Market, 451–453, 462
 capitalization, 67, 148
 manipulation, 287–292
 market-neutral investment strategies, 108
 participants, options, 21
 Mark-to-market valuation, 452
 Martin Marietta, Bendix takeover, 281–282

- Maryland Control Share Acquisition Act, 283
- Material adverse change (MAC), 109–110, 121, 129–130, 244–245
- Material adverse effect, *see* Material adverse change
- Maxheim, Christoph, 75
- May Day (1975), 177
- MBOs. *See* Management buyouts
- MCG Capital, 151–152, 151f
- McKesson Corp. acquisition, 157
- Mei, Danqing, 414, 418
- Men's Wearhouse, Jos. A. Banks (battle), 282
- Merger arbitrage, 3, 51, 96f
- activist merger arbitrage, 412–416, 415f
 - analysis, limitation, 70, 72
 - average annualized merger arbitrage spread, 61e
 - average spreads, 62
 - benefits, 88–98
 - bond-like returns/volatility, historical pattern, 101–102
 - credit risk management, comparison, 14–15
 - excess merger arbitrage returns, market returns (piecewise linear regression), 71f
 - excess merger arbitrage returns, piecewise linear regression, 74f
 - funds, 77–88, 79f
 - hedge funds, 65–66, 81f
 - indices, 82, 83t, 84f, 86f, 87t, 95
 - indices, 463–468
 - investments, 178
 - liquidity, impact, 146
 - long/short components, 34–35
 - low-volatility strategy, 172
 - mechanics, 18
 - performance, 64–77, 99f, 101f, 463
 - pre-quantitative easing performance, 101t
 - pure merger arbitrage strategy, 80
 - put option characteristics, Lefèvre diagram, 16f
 - ranking, 90t–93t
 - research approaches, 66, 68
 - returns, 71f, 72t, 146
 - reverse merger arbitrage, 108
 - risk, 64, 82, 85f
 - spreads, 60–65, 63f, 65t, 143
 - Standard & Poor's Merger Arbitrage Indices, 466t, 467t, 468f
 - term, occurrence/frequency, 19f
 - transactions portfolio, 139
 - universe, 57–59
- Merger closings, 105, 155–165, 158t, 440t, 454–455, 456f
- Merger Fund (MERFX), 95
- Mergers, 11f, 188–195
- acquirer/target SEC filings, 210t
 - activity, waves, 58f
 - agreement, 119, 121, 193e, 364e–366e, 419
 - announcement/closing, problems, 22
 - antitrust problems, 112
 - arbitrageurs, impact, 146, 250
 - arrangement, scheme, 196–197
 - Austria/Australia, public company mergers (timing), 162t, 163t
 - average acquisition premia, 137t
 - bidding wars, 180–186
 - breakup fees, 117–130t, 122t, 123t, 125f
 - buyer/target, relative size, 112
 - Canada, 160t, 398–401
 - cash mergers, 18–27, 144
 - categories, 17
 - Chinese companies, 186–187
 - Chinesing, 108
 - coerciveness, 272
 - collapse, 104f, 132
 - collars, usage, 42–49
 - consideration, 232–240, 233e–236e, 246
 - deal structures, 188
 - differences, 211
 - direct merger, 190f
 - due diligence, 116–117
 - Europe, impact, 401–402
 - failure rates, 106t
 - financing, 232
 - forward triangular merger, 191f
 - France, public company mergers (timing), 163t
 - fraud, 116–117
 - Germany, public company mergers (timing), 163t
 - government involvement, 363
 - hostile bids, 180–186
 - hostile mergers, ubiquity, 116
 - international anti-competition merger regulation, 380–382
 - large-scale mergers, problems, 111
 - law jurisdictions, 189t
 - legal aspects, 250
 - management opposition, 116
 - market capitalization, 67
 - mixed cash/stock mergers, 38–42

- Mergers (*Continued*)
- mixed stock/cash mergers, 17
 - national governments, impact, 394–402
 - number, 58f
 - opposition, 113
 - optionality, 47t, 49e
 - premium, 131
 - principal/conflict, handling, 255
 - process, 254–255
 - provincial governments (Canada), impact, 385–394
 - public intervention, 111–112
 - rationale, 219–220
 - reasons, 317e–322e
 - reverse triangular merger, 191f
 - SEC regulation, 210–211
 - securities regulators, 384
 - shareholders, 112–115, 409
 - short-form merger, completion, 156
 - state governments, impact, 385–394
 - stock-for-stock mergers, 17, 27
 - stocks, volatility, 51–56
 - structuring, 155
 - success, probability, 106–107
 - target company, arbitrageur holdings, 154t
 - tax policy, 382–384
 - tender offers, 105, 158–159, 202–207
 - ticking fee, 165
 - timing, 203t
 - trade unions, impact, 405–408
 - triangular mergers, types, 190
 - typology, 17
 - uncertain merger consideration, 232–240
 - United Kingdom public company mergers, timing, 161t
 - United States mergers, 158t, 159t, 395–398
 - windfall profits, types, 311
 - worldwide volume, 58f
- Mergers and acquisitions (M&As), 242
- appearance, 56
 - court decisions, 270
 - government involvement, 363
 - legal universes, 251f
- Merisel, Inc., 333–335, 336f
- Metropolitan New York, 375t–379t
- Mezzanine debt, 227–228
- Micro-cap stocks, trading volumes, 152
- Micron Technology, Tsinghua Unigroup acquisition, 398
- Milken, Michael, 228
- Minimum acceptable return (MAR), 87
- Ministry of Commerce (MOFCOM), 403–405
- Minority shareholders, 206, 347–355
- Minority squeeze-outs, 341–347
- control, 355–357, 359
 - family control, 355–360
 - layered ownership structures, 358
 - multiple share classes, 358
 - related party transactions, 358
 - share class structures, 357–359
 - special takeover defenses, 359
 - special voting rights, 358
- Mixed cash/stock mergers, 17, 38–42
- calculation (difficulty), 40–41
- Modigliani-Miller paradigm, 166
- Mondelez, 340
- Monopoly, conspiracies, 367
- Montebourg, Arnaud, 402
- Monte Carlo projections, 462–463
- Monthly excess return (alpha), 70
- MONY Group, AXA acquisition, 427
- Morningstar Credit Agricole Structured Asset Management Center for International Securities and Derivatives Markets (CASAM CISDM), 78
- Motorola Mobility, Google acquisition, 129–130
- Moyes, Jerry, 325
- MPG Office Trust, Brookfield Office Properties acquisition, 149
- MSCI Barra hedge fund indices, 78
- Muddy Waters (research firm), 186
- Multiple arbitrage, 219, 337–338
- Multiple share classes, impact, 358
- Murdoch, Rupert, 281
- Mutual funds, 469–473
- cash level, 457–458
 - merger arbitrage, usage (efficient frontier), 97f
 - publicly available mutual funds, merger arbitrage usage, 455
 - redemptions, 453
 - risk/return trade-off, merger arbitrage (usage), 96f
- Mylan NV, 152–153, 152f
- N**
- Naked short sales, prohibition, 448
- National Development and Reform Commission (NDRC), 403
- National governments, impact, 394–402
- National Home Health Care Corp. acquisition, 430

- National interest, stress, 111
National regulations, impact, 252
NDRC. *See* National Development and Reform Commission
Negative alpha, 442, 443f, 443t
Nelson Resources, Lukoil acquisition, 352–353
Net asset value (NAV) calculations, 82
Net returns, 139–140
Netsmart, 247, 317e–322e
Net spreads, 143
Neurolofy Products, 238
Nevada gaming regulation/redemption, Wynn Resorts description, 388e–394e
Nexen, Inc. China National Offshore Oil Co. (CNOOC) acquisition attempt, 400
No Extension statements, 267–269
No Increase statement, 267–269, 268e
Non-common law jurisdictions, regulations, 268–269
Noncore businesses, sale, 227
Noncore divisions, shedding, 339
Non-U.S. companies, exemptions, 290–291
Non-U.S. merger, composition, 59
- O**
Odyssey HealthCare, 114
OFI Asset Management study, 65
Ohio Mattress, bank placement failure, 248
Omnicare, Inc. v. NCS HealthCare, 275
Omnicom, control provisions (change), 299e–303e
OneChicago, single stock futures offering, 437
OneSource Information Services, shareholder rights plan, 278–279
Options, 437–443
 prices, 176, 440t
 trading volume (Superior Essex Inc.), 177f
 vesting, 311
Order book, 151f, 152f
Order placement, technological improvements, 178
Overpayment risk, 9
- P**
Pac-Man takeover defense, 281–282
Parent Share, 44
Passively managed risk arbitrage index, creation, 69
Paulson & Co., 338
Payment in kind (PIK) debt, increase, 228
Payoff diagram, usage, 49
Payoff distribution, 14f, 15
Payout profile, 175
PDS Gaming, installment sale, 231
Peak, criteria, 98
Peltz, Nelson, 276
Peoplesoft products, 277
Permitted bids, 280
Perry Corp. King shares ownership, 446
Pershing Square Capital Management LP, 412, 434
Petrasek, Lubomir, 155
Pickens, T. Boone, 276
Piecewise linear regression, estimation, 69
PIK. *See* Payment in kind
Pinnacle Gas Resources, 115, 134–136, 136f
Poison pills, 186, 278–280, 283, 427
Portfolios, 72t, 177–180, 461
Post-merger HHI, 374t
Potash Corporation, BHP Billiton acquisition attempt, 399–400
Preannouncement stock returns, 54
Preferred stock, 148–149
Premia, historical information, 136
Price/earnings (P/E) ratio, 337–338
Price efficiency, definition, 449
Priceline.com, Kayak Software Corp. merger agreement (forward triangular merger description), 193e
Price movements, French regulation, 262e
Prince, Charles, 240–241
Prisoner's dilemma, 113
Private equity, 328–331, 336–340
Private equity buyouts, 312–315, 328, 331–333
Private-equity sponsored management buyout, 76–77
Private investments in public equity (PIPE), 329–330
Product, true value (discovery), 9
Profit sharing agreements, 342–343, 343e–344e
Progress Energy Resources Corp., Petronas Bhd acquisition attempt, 400
Promissory notes, issuance, 225–226
Proration provision, 41
Provincial governments, impact, 385–394
Provincial laws, impact, 252
Proxy campaigns, 209, 433–434
Proxy statements, 209, 216, 418–419, 425
Pseudo-probability, calculation, 464–465
PTTEP, hostile bid, 126

Public company mergers, timing, 160t–163t
 Public equity, private investments, 329–330
 Public intervention, 111–112
 Publicly traded companies, family control, 355–360
 Public opposition, 433–434
 Put option characteristics, Lefèvre diagram, 16f
 Put up or shut up regime, 262

Q

Quaker Event Arbitrage Fund (QEAX), 95, 97
 Qualified dividends, tax rate, 167
 Quantitative easing (QE), 98–102, 101t
 Quest Resources Corp., 134e–135e, 136f
 Quiznos, going-private transaction, 427

R

RBC. *See* Royal Bank of Canada
 Real estate investment trusts (REITs), 87, 164–165, 169, 229
 ReFlow Management Co., shares acquisition, 457
 Regulation, SEC approach, 209–216
 Regulation SHO, 447, 448
 Regulation T, 173, 205
 Reincorporation, impact, 281
 Related party transactions, 326e, 323–327, 324e–325e, 358
 Reporting periodicity, variation, 471
 Restoration Hardware, acquisition, 430
 Returns, 72t
 annualized return, 26f, 163
 arbitrage, expected return, 139–140
 daily returns, 54f, 56f
 excess merger arbitrage returns, 71f, 74f
 extension risk, impact, 163t
 leverage, impact, 172–174
 monthly return statistics, 83t
 portfolios, merger arbitrage returns, 72t
 projections, 25
 short sales element, 169–172
 sources, 143
 Reverse merger arbitrage, 108
 Reverse triangular merger, 190, 191f, 193e–194e
Revlon v. MacAndrews & Forbes, 272, 274, 345
 Rising market, constant percentage spread (losses), 35t

Risk, 103, 143
 arbitrage, 5
 downside risk measures, 88t, 467t
 management, 435, 460–463
 risk/return profile, 342
 split, 236
 statistics, CAPM framework, 83
 systemic risk, 248
 Risk-free interest rate, indicator consideration, 64
 Risk-return trade-off (risk/return trade-off), 89, 96f, 468f
 Rohrabacker, Dana, 398
 Royal Bank of Canada (RBC), 241–242
 Rue21, Inc., 293, 294e–297e
 Rule 13-e3 (Rule 13-E3) (SEC), 215–216, 293
 Rule 14d-10 (SEC), 204–205
 Rule 14E (SEC), 214–215
 Rule 425 filing (SEC), 210
 Rumors, 11–12, 261e
 Rural/Metro Corporation, Emergency Medical Services acquisition, 241

S

Sack, Burton, 417
 Sale financing, 229
 Sale-leaseback transactions, structuring, 229
 Salix Pharmaceuticals, Allergan acquisition, 412
 Sanofi/Genzyme CVR, 238t, 239f
 Sarbanes-Oxley law, 225
 Savasoglu, Serkan, 72
 Schedule 13D (SEC), purchases, 348–349
 Schedule 13E-3 (SEC), 298, 348
 Schedule 14A (SEC), 210–211
 Schedule 14D-9 (SEC), 215
 Schedule K-1 (IRS), 469, 471
 Schedule TO (SEC), 210, 290–291
 Scheme of Arrangement, *see* Arrangement
 SCPIE, The Doctors' Company acquisition, 114
 Second requests, 369
 Securities, 384, 388e–394e, 429, 445t
 Securities and Exchange Act, Section 10b-5, 427
 Securities and Exchange Commission (SEC)
 acquirer/target filings, 210t
 filings, 209, 222
 merger regulation, 210–211
 regulation approach, 209–216

- rules, 214–216
- tender offer regulation, 211–215
- Security Capital, MTN Capital acquisition, 160
- Sellers, 146, 230–231
- Semi deviation, 85
- Shannon, John, 75
- Shareholders, 255, 288–289, 349
 - abuse, occurrence, 411
 - activism, 407–408
 - activists, rise, 411–412
 - base, composition (change), 131
 - beneficial owner status, 425
 - board disenfranchisement, justification, 275–276
 - economic exposure, absence, 192
 - investment exit, 144
 - opposition (mergers), 112
 - price maximization, board (impact), 273–275
 - proxy campaigns, 433–434
 - public opposition, 433–434
 - reincorporation, impact, 281
 - selling shareholders, payment, 222
 - shares, withholding, 434
 - stock sales, impact, 409–411
- Shares, 357–359
 - borrowing, 446
 - withholding, 434
- Sharpe ratio, 85
- Shell acquisition of Cove Energy plc, breakup fee, 128e
- Sherman Act of 1890, 56
- Shorin, Arthur T., 332
- Short biased hedge funds, performance, 444t
- Shorted stock, dividends payment, 172
- Short-form merger, 156, 199
- Short sales, 29–30
 - activity, 450f
 - closing, process, 29–30
 - hedges, comparison, 169–172
 - naked short sales, prohibition, 448
 - selling pressure, 34
- Short sellers, position coverage, 447
- Short selling, 443f, 444
 - bans, 448–449
- Short-term capital gains (generation), merger arbitrage (usage), 180
- Siemens, acquisition (rumor), 13f
- Silconix, Vishay Intertechnology acquisition, 347–348
- Silver Lake Partners, acquisition
 - proposal, 311
- Simon Properties, 385–386
- Simple interest, calculation, 24
- Single stock futures, OneChicago offering, 437
- SISU Capital Ltd., 426, 430
- Small-cap premium, manifestation, 148
- SOE. *See* State-owned enterprise
- Soft dollars (brokerage commission), 451–452
- Solomon v. Pathe Communications Corp.*, 272
- Sortino ratio, 85
- Southeastern Asset Management, merger stake, 113
- Southwest Airlines Co., 47e–48e, 49
- Sovereign Bancorp, Grupo Santander acquisition, 116
- Spain, takeover timetables, 264f–265f
- SPAR-Mutual algorithm, 458, 459e
- Special takeover defenses, 359
- Special voting rights, 358
- Speculation, arbitrage (differences), 9
- Spreads, 18, 60e, 63f, 171t, 179
 - annualized spread, increase, 37
 - average annualized merger arbitrage spread, 61e
 - bid/offer spreads, 452
 - deal spread, 143–144
 - dispersion, downtrend, 62
 - evolution (Autonomy Corp.), 145f
 - information, problem, 67
 - leveraged loans, 249f
 - merger arbitrage spreads, 60–65
 - overview, 178t
 - problems, avoidance, 68
 - widening, 163
 - width/tightness, 143
- Spruchverfahren*, 343
- Squeeze-outs, 341, 342t, 346–355
- Standard & Poor's 500 (S&P500) Index, 72, 183f
- Standard & Poor's (S&P) Depositary Receipts (SPDR), 95
- Standard & Poor's Merger Arbitrage Indices, 466f, 467t, 468f
- Stapled financing, 231
- State Administration of Foreign Exchange (SAFE), 403
- State Administration of Industry and Commerce (SAIC), 403

- State Administration of Taxation (SAT), 403
 - State governments, impact, 385–394
 - State laws, impact, 252
 - State-owned Assets Supervision and Administration Commission (SASAC), 403
 - State-owned enterprise (SOE), 400–401
 - Stefanescu, Irina, 72
 - Stifel Financial Corp. acquisition, 43e
 - Stock-for-stock mergers, 17, 27, 33–34, 59, 133, 217
 - analysis, perils, 66–73
 - arbitrage, comparison, 172
 - cash mergers, contrast, 144
 - cash receipt, 454
 - market movement protection, 462
 - short leg, 438
 - Stock-for-stock offer, 452
 - Stock-for-stock swap, 231–232
 - Stock-for-stock transactions, 70, 461–462
 - Stocks
 - appreciation rights, 299
 - arbitrageur shorting, 36–37
 - bonds (combination), efficient frontiers, 94f
 - cash merger, idealized chart, 21f
 - combination, 54
 - investors, payoff distribution, 14f
 - market, development, 132–133
 - mergers, percentage, 59f
 - multiple classes, 281
 - options, 299, 438
 - ownership, percentage, 106
 - preannouncement stock returns, 54
 - preferred stock, series, 149
 - price, examples, 181f
 - shorting, 444–450
 - short seller, 172
 - trading volume (description), liquidity (usage), 148
 - volatility, 51–56
 - Stonington Partners, 334–335
 - Strategic alternatives, 13, 413
 - Strine, Leo, 323
 - Summary term sheet, 214
 - Sungard Data Systems, acquisition, 311–313
 - Sunoco Inc., Energy Partners, LP acquisition, 39–40, 40e
 - Superior Essex Inc., option trading volume, 177f
 - Supervoting shares, usage, 355
 - Supra-national regulations, 251–252
 - Survivorship bias, 80
 - Swiss Performance Index (SPI), 75
 - Switzerland, takeover timetables, 264f–265f
 - Swoboda, Otto, 4–5
 - Symmetric performance fee, risks, 470–471
 - Systemic risk, 248
- T**
- Takeover Code, 161, 257–289, 273
 - Takeovers, 259f, 260f, 264f–265f
 - best price rule, 286–287
 - board, 270–271
 - buybacks (leveraged recapitalizations), 282
 - buyer lockout, 266
 - creeping takeovers, 284–286
 - cross-border transactions, 290–291
 - cumulative voting, 281
 - defenses, 276, 278, 281–283
 - entire fairness, requirement, 271–272
 - exit rights, 291–292
 - freeze-out, 282–382
 - hostile takeover transactions, ranking, 182t
 - Imaging Ltd./Covidien merger agreement, voting conditions, 289e–290e
 - mandatory acquisitions, 284–286
 - mandatory takeover rules, characteristics, 285t–286t
 - market manipulation, 287–292
 - mergers, coerciveness, 272
 - No Increase/No Extension statements, 267–269
 - Pac-Man takeover defense, 281–282
 - poison pills, 278–280
 - shareholders, 273–276, 288–289
 - speculation, presence, 132
 - staggered boards, impact, 280–281
 - stocks, multiple classes, 281
 - U.S. court decisions, 269–276
 - Takeunder, 22
 - Target, 18
 - balance sheet, cash (availability), 227
 - breakup fees, 117–118, 118f, 119f
 - cumulative abnormal stock returns, 208t
 - loss severity, 133
 - Target company, 154t, 214, 219
 - Tashman, Adam, 463
 - Taubman Centers, Inc., ownership battle, 385–386

- Tax
 - deferral, application, 383
 - inversion, 383
 - policies, 382–384
 - post-inversion, 383
 - reporting (mutual funds), 471
- Tax Increase Prevention and Reconciliation Act of 2005, 167
- Tender offers, 105, 156, 198–205
 - acquirer/target SEC filings, 210t
 - advantage, 198
 - amendment, 215
 - arrangement, scheme, 196–197
 - bidder, share ownership, 214
 - completion, 155–156
 - deal structures, 188
 - extension, 214–215
 - financing, 232
 - funds, sources, 214
 - judicial review, impact, 272
 - law jurisdictions, 189t
 - mergers, 158–159, 202–207
 - Rule 14E requirements, 214–215
 - SEC regulation, 211–215
 - shares, withholding, 434
 - speed, increase, 202
 - statements, 209, 214, 216
 - summary term sheet, 214
 - timing, 203t
- 3G Capital, Burger King merger, 200e–201e
- 3PAR, 184, 185f
- Ticking fee, 165
- Tight spreads, 143
- Time-weighted portfolio, structuring, 75–76
- Tokyo Electron (ETL)/Applied Materials,
 - merger agreement, 363, 364e–366e
- Topps, lawsuit, 332–333, 428
- Top-up option, 156, 200e–201e
- Total return swaps, sellers, 441
- Touchstone Merger Arbitrage Fund (TMGAX), 95
- Tower Australia, Dai-Ichi Life Insurance Company (arrangement scheme), 196e–197e
- Tracking error, 83
- Trade unions, impact, 405–408
- Trading, 178, 179
 - insider trading, 22–23
 - investing, contrast, 435–436
- Trane, Ingersoll-Rand acquisition (account), 34e
- Transactions, 214
 - Atmi, Inc. transaction bonus agreement (disclosure), 304e–305e
 - breakup fees, 120f, 124f
 - costs, 450–453
 - going-private transactions, 215–216
 - hedging, accuracy, 45
 - timing, arbitrageur analysis, 162
- Transkaryotic* decision, 418, 425
- Treasury bills (T-bills), 24
- Treasury yield, short-term trough/peak, 98
- Treynor ratio, 85
- Triangular mergers, types, 190
- Tropicana Casino license, withdrawal, 387
- Trough, criteria, 98
- Truststreet Properties, General Electric
 - acquisition, 149, 151
- Truststreet series C preferred stock, volume chart, 150f
- 220 requests, 431–432
- U
- UCITS-compliant funds, 78
- UCITS funds, 470–471, 473
- Uncertain merger consideration, 232–240
- Unisource Energy, Kohlberg Kravis Roberts & Co. acquisition, 103, 387
- Unisource stock price, postmerger collapse, 104f
- United Kingdom (UK)
 - breakup fees, 127f
 - City Code on Takeovers and Mergers, 257
 - public company mergers, timing, 161t
 - Takeover Code, 57, 250, 257–269
- United States
 - antitrust rules, 367–369, 380
 - incorporation laws, 385–387
- United States mergers, 158t, 159t, 395–398
- United Steelworkers (USW), Esmark
 - contract, 406
- University of Massachusetts Amherst, MAR data, 78
- Unocal v. Mesa Petroleum*, 270–271
- Unreasonably small capital, presence, 245
- UOP, Inc., majority shareholder, 271
- Upmarkets, consideration, 70
- Upper Deck, 332, 428
- Upside/downside capture ratio, 87
- U.S. minority shareholders, impact, 344–346
- Utilities, takeover (failure), 386
- V
- Valeant Pharmaceuticals, 186, 412
- Valuation opinion, 243
- Value-at-Risk (VAR), usage, 54

Value trap, 410
Van Gorkom, 246, 270
Vector Capital, 312
Verenium Corporation, 217, 218f
VistaCare, acquisition, 114
Vodafone, Supreme Court ruling, 384
Volatility, 50–56
 implied volatility, 177f
 low-volatility strategy, 469
Volkswagen AG, Porsche SE takeover, 282, 447
Volume-weighted average price (VWAP), 31, 39, 284
Vulcan Materials Company, Energy Transfer Partners, LP, acquisition, 39

W

Walkling, Ralph, 155
Wallace, Carter, 417
Wang, Jia, 73
Wasserstein, Bruce, 242

Weighted average cost of capital (WACC), 421
Wells Fargo/Wachovia merger, effect, 379t
Westfield America Trust, 385–386
Wide spreads, 143
Wild Oats, Whole Foods acquisition (FTC injunction), 380
William Blair, fairness opinion, 247
Wilshire Enterprises, 212e–213e, 346
Windfall profits, types, 311
Windrose Medical Properties, 44–45, 44e
World Focus, debt, 331
Wynn Resorts, 387, 388e–394e

Y

Yang, Taewon, 73, 106
Yeoh, Soon Chin, 75

Z

Zilbermints, Boris, 353

WILEY END USER LICENSE AGREEMENT

Go to www.wiley.com/go/eula to access Wiley's ebook EULA.